Trainers' Guide &
Reference Manual

The National Guidelines for the Management of Sexually Transmitted Infections

The National AIDS Control Programme

The World Health Organization

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PREFACE

Globally, sexually transmitted infections (STIs) constitute a major cause of acute illness, infertility, long-term disability and death, with severe medical and psychological consequences for millions of men, women and infants. The impact of these diseases is further aggravated by their potential to facilitate the spread of HIV infection. On the other hand the presence of HIV/AIDS also increases the risk of acquiring other STIs. It is therefore imperative to bring about the functional integration of services for STIs and HIV/AIDS for achieving better outcomes.

In view of this, the World Health Organization promotes diagnosis of STIs on the basis of recognizing a pattern of symptoms and signs (syndromes) and the provision of the most effective therapy during the patient's first contact with a health care provider. This approach provides health workers in low-resource settings with a practical tool to make a diagnosis and provide effective treatment. The syndromic case management approach is simple, cost-effective, and swift in managing STIs cases and can be implemented on a large scale by different cadres of health professionals. The approach allows for a diagnosis to be made and effective treatment provided during the patient's very first visit to a health facility.

These guidelines focus primarily on curable conditions and pathogens that are the main focus of STI control programmes such as syphilis, chancroid, gonorrhoea, chlamydial infection, trichomoniasis, and their associated syndromes. Viral infections that are often sexually transmitted (including herpes simplex viruses [HSV] and human papillomaviruses [HPV]) are also of major importance, and have been made part of these guidelines. Furthermore, the guidelines consist of treatment flow charts and a training manual for trainers.

This document is intended to provide technical guidance for all health care providers, regardless of whether they are working in the public or private sectors.

ACKNOWLEDGEMENTS

The current publication intends to revise and update the first edition of National guidelines for the Management of Sexually Transmitted Infections developed earlier through adaptation of the WHO STI Management guidelines. It was developed through a consultative process at the national and provincial levels led by the National AIDS Control Program (NACP) in coordination with Provincial AIDS Control Programs and the World Health Organization.

The National AIDS Control Programme, NACP gratefully acknowledges the valuable contributions of numerous individuals from the Dermatology departments of teaching hospitals in all provinces, independent researchers in STIs, NGOs working in prevention and service delivery programs, governmental and UN agencies. The consultant for the process was Dr Adnan Khan, Infectious Disease Specialist, who in association with Dr Quaid Saeed WHO National Officer for HIV and AIDS and Dr Aliya Rabbani, Epidemiologist, NACP, developed the National guidelines for Management of STIs.

Special thanks are extended to all the four Provincial AIDS Control Program Managers namely Dr. Ali Razaque (Punjab), Dr. Mohammed Zafar (NWFP), Dr. Arshad Mehmood (Sindh), and Dr. Nasir Khan (Balochistan) for facilitating consultative meetings in the provinces and actively participating in developing and updating this document. We are indebted to the World Health Organization for funding and coordinating the process through organizing the provincial workshops with the support of their provincial officers. Support for the publication of this document was jointly shared by WHO and the United Nations Population Fund (UNFPA), for which we are grateful.

Finally, the support given to and political will for delivering effective STI Management by the Ministry of Health and provincial Departments of Health is deeply appreciated, as without their support we would not have been able to proceed towards our goal of improving the quality of life of people infected and affected by HIV and AIDS.

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National AIDS Control Program

INTRODUCTION

Sexually Transmitted Infections (STIs) impose a considerable burden of disease in developing countries. They are also unique in that many social issues impact their care seeking and care delivery, making their care provision complex and culturally nuanced. While prevention of STIs is fundamental to their control, this is often difficult due to the very same social reasons that give rise to these infections. Additionally the recent understanding of their interaction with HIV and enhancement of its transmission adds another level of complexity and urgency to their management.

Pakistan has produced quality guidelines for the management of STIs for a number of years. They have formed the basis for provider trainings that have been undertaken by the government and the private sector. The need for this current revision of guidelines was felt for some time as the previous revision took place around 2002.
The critical considerations in this revision have been to maintain the technical accuracy of the algorithms used and to ensure that these are applicable in our own context. The primary end-users of the guidelines and their trainings are non-specialist providers such as the general practitioners, doctors staffing the rural clinics, basic health units and other primary medical care outlets.

Technical accuracy of the algorithms has been maintained by staying consistent with the World Health Organizations recommendations which have been validated in a number of cultural settings. In order to understand the cultural context of STI care delivery in Pakistan, we conducted in depth interviews with over 45 providers from the academia, public and private sector specialists, general practice and NGO providers, one focus group discussion with outreach workers for female sex workers and 2 consultative workshops with providers and high risk group peer outreach workers to understand technical and operational issues in implementation of these guidelines.

One critical departure from published international guidelines was the management of anal symptoms. There is no consensus available on how to manage anal symptoms, or even what these symptoms are. We included most symptoms that had been mentioned by national providers and have attempted to address them as scientifically as possible. This is done with the realization that this algorithm must be validated for its applicability.

The primary strategy is for this manual to be used as the basis for training of providers in STI management. We have tried to be as comprehensive as possible without expanding the text too much. This manual is to be used in conjunction with the PowerPoint presentation (or flipcharts) for training that have been produced simultaneously. The manual is also intended as a resource for trainers and is referenced where applicable. It is intended that the actual trainings will be of one day each. Longer trainings have been associated with lack of enthusiasm on part of trainees.

During the guidelines revision and adaptation the National AIDS Control Programme and the WHO, Pakistan office provided tremendous support. I am personally obliged to Dr. Asma Bokhari and Dr. Aliya Rabbani of the NACP and to Dr. Quaid Saeed of the WHO for comments, critique and advice during the process. My special thanks go to Professor Hunter Handsfield, University of Washington and Director of the STD Control Program for Public Health, Seattle & King County, whose advice lay the foundation for the section on anal symptoms and is the pioneering step in these guidelines.

As with all knowledge, STI care is rapidly changing. It is intended that these guidelines will be revisited and revised periodically as needed. In the meantime I implore its users to identify ways in these guidelines may be improved.

Dr. Adnan A. Khan
Editor
Islamabad 2007

BASIC OUTLINE AND CONCEPTS

As the name suggests, sexually transmitted infections (STIs) are transmitted via sexual contact. They are a major public health concern that has been further highlighted with their association with HIV.

Worldwide epidemiology of STIs

These are among the commonest infections in the World. With more than 340 million new infections world wide annually, STIs poses a major burden of disease which is unevenly shared by developing countries[1]. While they directly caused morbidity in their own right (few caused direct mortality – although they account for 17% of economic losses due to ill health[2]), the advent of HIV added a deadly ingredient to the situation. Many STIs (notably Herpes simplex virus – type 2 and H. ducreyi) greatly enhance the sexual transmission of HIV among individuals co-infected with HIV and these STIs[3-5].

HIV and STIs

In the era of HIV epidemics control and treatment of STIs is important for another reason. Since STIs share their risk factors with HIV, they serve as surrogates for early detection and prevention of HIV in countries with early HIV epidemics. The best intervention for controlling either STIs or HIV remains condoms. STI management venues serve as portals for condom delivery and for sexual risk counseling.

Epidemiology of STIs in Pakistan

In Pakistan, STIs are relatively uncommon among the general population. In a large multi center study in 2001 most STIs were found in <0.5% of all women attending antenatal clinics or labor wards[6]. This contrasts with much higher prevalences of all STIs among members of high risk groups[7,8]. A large study from Karachi and Lahore showed that syphilis was present in up to 60% of Hijras, 30% of whom also had anal gonorrhea.

Care seeking for STIs in Pakistan

Care seeking for STIs in Pakistan is similar to much of other care seeking in Pakistan. Most high risk group members seek care from the private sector – mainly general practitioners and non medical personnel[8]. Public sector STI facilities tend to provide services to mainly clients of sex workers and others who acquire STIs from non commercial sex. In either of the settings, the typical care provider – patient encounter is short, usually less than 5 minutes (based on provider interviews during the guidelines development). This essentially highlights the necessity of short and easy to use guidelines for STI management.

Risk behaviors reduction

Due to high morbidity and the concern with HIV transmission, prevention of transmission and acquisition of STIs is critical. STIs are communicated via sexual contact. Restricting ones partners and

using condoms consistently significantly reduces ones risk of acquiring (or transmitting) STIs and HIV. Providers must address such high risk behaviors as multiple partners, commercial sex and condom non-use.

Counseling and condom promotion

While patient encounters are ideal to deliver prevention messages[8,9], it is recognized that shortage of time will limit any counseling that can be offered to patients. Under these circumstances, it is critical that the condoms must still be promoted. Condoms provide the best protection available against HIV and STIs[10] and it is strongly recommended that providers hand out free condoms at STI care seeking encounters.

One major point needs to be clarified. Many individuals may confuse ejaculations with discharge. These ejaculations may be due to masturbation or nocturnal (and therefore involuntary and unseen). Due to taboos in our society, many young adults feel uncomfortable with their ejaculations and turn for medical help when they do. These must be re-assured rather than treated with antibiotics.

Partner Notification/ Treatment

Partner notification remains the cornerstone of prevention of STIs in a community. While recognizing the difficulties associated with partner notification (resources, time and social issues) it is strongly recommended that providers consider partner delivered medicine. In this process, the patient is encouraged to give their partner the same medication they will receive for their STIs. While less than perfect it does increase some level of partner treatment. To do so the provider must provide the patient either extra medicine or prescriptions.

Referrals

While these guidelines are meant to be applied by providers independently, a role is envisioned (and recommended) for difficult infections as well as special circumstances such as *venereal warts* which are associated with Human Papillomavirus (HPV), some serotypes of which lead to cervical cancer, which is preventable if addressed early.

Linkages with Reproductive Health:

It has been our observation that much of the STI management is diversified according to the client and specific types of clients tend to favor specific types of providers.

Fortunately, at least in most larger cities public sector facilities exist which specialize in STI management. Additionally NGOs also exist that specialize in STI management and other aspects of STI care. For the moment the clinicians are advised to seek referral at these facilities. In future local or regional referral centers.

Two forms of linkages were identified in our consultations. 1) Gynecologists should act as the specialist to whom either difficult infections or patients with warts are sent to. 2) All patients that are considered for STI management in gynecology set up must be considered for syphilis testing and if positive for treatment.

Finally since all patients suspected of having an STI are sexually active, such a visit is an opportunity for the provider to discuss family planning. It is useful to note that use of condoms will protect against STIs and pregnancies.

Transmission of STIs:

STIs are transmitted predominantly via unprotected sexual contacts. These include vaginal, anal or oral sex. Other modes may also play a role including mother to child transmission and occasionally via unsterile needles and injections. Among the types of sexual contact, anal sex is particularly important. Due to the trauma involve in an anal sex act, there is more inflammation and this leads to more acquisition of STIs particularly HIV.
In this regard promotion of condom use is the most effective prevention strategy followed by reduction in partners.

It is also noted that women are more vulnerable to STIs due to a number of reasons. 1) Most STIs are transmitted from men to women more readily than they are from women to men. 2) In most circumstances can not control the use of condoms due to social factors (economic or social dominance of men, sexual and other violence). In fact evidence from India suggests that being married is a significant risk factor for HIV acquisition for many women.

A client's likelihood of acquiring an STI depends on certain behaviors of their partner as well. These include: 1) has sex with others 2) Injects drugs 3) a male sex partner who has sex with other men is at a higher risk of having an STI.

Special Populations at higher risk of having STIs:

STIs are communicable diseases that are transmitted with particular contacts between individuals. In this regards some members within the society display activities and behaviors that place them at a higher risk for having and transmitting STIs. These include male and female sex workers, drug users and men who have sex with men. A patient who relates a history of having sexual contact with any of these population groups is themselves at higher risk of having an STI. This becomes particularly important in case of algorithms for vaginal discharge and lower abdominal pain.

Preventing STIs

The foremost goal in STI management is to prevent future infections and to limit the spread of infections within the community. There are 3 basic levels of prevention in public health. *Primary prevention* is preventing the infection before it arises. This is a primary function of advocacy and is beyond the scope of these manual and guidelines. *Secondary prevention* is the prevention practiced after acquisition of infection and also includes onward transmission to partners of the patient. This level of prevention is the primary prevue of this manual and is discussed in detail. *Tertiary prevention* is the minimization of disability from infections in a patient and is dealt here to the extent that early treatment and therefore avoidance of complications is emphasized.

Target Audience for these guidelines:

Since the bulk of STIs are managed in the private sector in Pakistan, these guidelines are mainly meant for use by private practitioners. These include general practitioners and community level providers such as clinics, nursing homes etc. However care has been taken to incorporate appropriate references and other material to indulge the attention of specialists as well. The main

format of these guidelines is to provide simple flowcharts for immediate use that are backed by a more detailed manual that is to serve as a trainers' guide and reference manual.

Aims and Objectives of this manual:

Foremost this manual provides support to the national STI management guidelines. It is meant as the reference that trainers can use for trainings on STI management. In this regard the manual is linked with the PowerPoint presentation (which can also be used in a flip chart form) that has also been developed. The manual and the presentation are synchronized in that they share chapters and the content in the same sequence.

Beyond training, the manual is also meant to serve as a reference document that summarizes fundamental principles of STI management, collates the scientific basis for the management and may be used as the starting point for someone looking into STIs and their management with focus on Pakistan.
The PowerPoint presentation has been adapted slide by slide from this manual. Each slide corresponds to specific sub-headings in this manual. There are notes provided at the bottom of many of the slides to facilitate the trainers.

Terminology used in the guidelines and the manual:

The internationally accepted termed Sexually Transmitted Infections (STIs) has been used in these guidelines. This is a departure from the use of Sexually Transmitted Diseases (STDs) which were felt to suggest a more permanent ailment or disease and is meant to highlight the infectious nature of these infections. The term Reproductive Tract Infections (RTIs) has been generally abandoned for STIs. RTIs are a wider group of conditions many of which are not sexually transmitted.

SYNDROMIC MANAGEMENT

Traditionally STIs have been managed in the usual History-Examination-Laboratory testing paradigm. While appealing due to provider comfort with this paradigm, strong evidence suggests that more often than not, use of laboratory testing adds little to the quality of care or accuracy of the diagnosis. As a result, a set of guidelines have been developed based on international experience. There is surprisingly strong correlation between the efficacies of these guidelines across different cultures. The most popular set of international guidelines in common use are those developed and recently updated by the *World Health* Organization[11]. The technical evidence behind these guidelines is discussed later in this document. Suffice it now to say that these guidelines work at least as well as the traditional laboratory based approach and perhaps even better. They can be applied in resource constrained setting where laboratory testing is not possible. Since considerable solid evidence validates much of these WHO guidelines, we are using these guidelines as the template to develop locally contextualized guidelines for Pakistan.

Benefits of the Syndromic Approach

- Standardization of care
- Cost effectiveness

Treatment efficacy and Cost effectiveness

In the international arena there is abundant evidence that application of these guidelines leads to effective and cost effective care of STIs[12]. Due to the relative ease in teaching these guidelines to less trained providers and due to their ease of use, they lend an element of standardization to STI management throughout the country.

Basic outline of syndromic management

The basic concept of syndromic approach to STI management is that in resource constrained situations, a laboratory supported etiological diagnosis based STI management is costly and often beyond what is available to the providers. This is also the case for most providers of STI care in Pakistan. In this regards the syndromic approach standardizes the age old method of clinical care where the clinician makes a medical judgment about the cause of the complaints based on the history and physical examination findings. These algorithms have been tested and found reliable in a variety of settings the World over. More recently evidence from even the developed countries suggests that this approach may be comparable in efficacy to a laboratory based approach and is more cost effective.

An additional advantage of the syndromic approach is that in practice it actually minimizes the overuse of antibiotics. In our experience clinicians often "cover" extra ground when faced with STI syndromes, sometimes treating with 5 or more antibiotics due to concern about not "missing" something. By focusing on 1 of the 6 syndromes, this approach actually restricts antibiotics to 1 or 2 in most cases. This has implications for reducing antibiotic resistance in the community.

Limitations of the Syndromic approach

While the guidelines are probably the best available under the circumstances, they have their limitation. They work very well for male STIs but are less effective for female STIs. However even the

female STI management guidelines work well when the burden of STIs is high such as in dedicated STI clinics and presumably for members of populations which are at a high risk for STIs. There are currently no standardized recommendations available for anal STIs. A further limitation is that in the current scenario in Pakistan, where many general practitioners and non-traditional providers (Hakims etc) participate in STI management, there is no regular mechanism available to test for and manage syphilis.

Limitations of the Syndromic approach

- Works better for male STIs
- Female algorithms work better in high risk settings
- No algorithms for anal symptoms
- Syphilis management which requires testing is not well addressed by these guidelines

Syndromes to be discussed

In these guidelines we will address 6 major symptom syndromes:

1. Urethral Discharge
2. Genital Ulcer
3. Scrotal Swelling
4. Vaginal Discharge
5. Lower abdominal pain
6. Anal symptoms

While the first 5 are the usual components of most syndromic management guidelines, anal infections particularly among men who have sex with men are common and pose similar diagnostic dilemmas as vaginal infections, ie many such infections are asymptomatic. An algorithm has been included here although it comes with the realization that no standardization has been conducted for this. Future experience with implementing these algorithms will likely guide its improvements.

STIs of interest

1. Human Immunodeficiency Virus (HIV)[§]
2. Neisseria gonorrhoeae (NG or GC – short for **G**ono**C**occi)
3. Chlamydia trachomatis (CT)
4. Herpes simplex (HSV) (HSV-2)[*]
5. Trichomonas vaginalis (TV)
6. Candida albicans
7. Bacterial Vaginosis (BV)[†]
8. Syphilis (Treponema pallidum)
9. Human Papilloma Virus (HPV)
10. Haemophilus ducreyi (Chancroid)[‡]

A hallmark of syndromic management is that this approach seeks to provide treatment for all causative organisms for the syndrome rather than providing treatment for only one cause.

[*] Since genital infection happens more commonly with HSV type 2, hence the name HSV-2

[†] This is not actually an STI since its neither related to sex or is transmitted (there is no male version of BV), its never the less included in the list traditionally as it causes symptoms in some women and will be addressed here.

[‡] Based on physician interviews, this is not seen very much in Pakistan and therefore will not be addressed in any depth

11. Lymphogranuloma Venereum (LGV)[±]

While not truly STIs, Bacterial Vaginosis and Candida infections are addressed here since these condition affect women and their presentation and management is so closely interlinked with that of other STIs. Venereal Warts are also addressed here. Since the causative agent of the warts (Human Papilloma Virus – HPV) also causes cervical and anal cancer (although different sero-types are involved), it was considered that in addition to treatment of warts, referral should be emphasized.

Syndrome	Symptoms	Signs	Most common causes
Urethral discharge	Urethral discharge Dysuria Frequent urination	Urethral discharge (if necessary ask patient to milk urethra)	• Gonorrhoea • Chlamydia
Genital ulcer	Genital sore	Genital ulcer	• Syphilis • Chancroid • Genital herpes
Scrotal swelling	Scrotal pain and swelling	Scrotal swelling	• Gonorrhoea • Chlamydia
Lower abdominal pain	Lower abdominal pain Dyspareunia	Vaginal discharge Lower abdominal tenderness on palpation Temperature >38°	• Gonorrhoea • Chlamydia • Mixed anaerobes
Vaginal discharge	Unusual vaginal discharge Vaginal itching Dysuria (pain on urination) Dyspareunia (pain during sexual intercourse)	Abnormal vaginal discharge	<u>Vaginitis:</u> (39) Trichomoniasis (40) Candidiasis <u>Cervicitis:</u> • Gonorrhoea • Chlamydia
Anal Symptoms	Anal Pain Anal Discharge Anal or peri-anal sores	Anal tenderness Anal Discharge Anal or peri-anal Ulcers	• Gonorrhoea • Chlamydia • HSV-2
Basic Etiology (causative organisms) of Syndromes			

Drugs used for STIs[§]

1. Cephalosporins (Ceftriaxone, Cefixime)
2. Macroloides (Erythromycin, Azithromycin)
3. Quinolones (Ciprofloxacin, Levofloxacin, Ofloxacin)
4. Penicillins (Benzyl Penicillin, Benzathine Penicillin)
5. Tetracyclines (Doxycycline, Tetracycline)
6. Acyclovir
7. Metronidazole
8. Azole antifungals (Fluconazole, Tinidazole, Clotrimazole)
9. Topical agents (Metronidazole, Clotrimazole, Podophyllin)

Common side effects of these drugs are discussed the chapter on treatment of syndromes. Since many company manufacture these drugs, common names used in Pakistan are listed in the annexe.

Issues of antibiotic resistance

The main concern with antibiotic resistance is for N. gonorrhoeae. While in theory resistance can be a problem with syphilis as well, in practice this is of little concern Worldwide[**]. The other agent for STI that has shown resistance to common antibiotics is H. ducreyi (the agent of chancroid). Thus far chancroid seems to be uncommon in the Pakistani clinical context.

The resistance of N. gonorrhoeae threatens to be a major concern. Already many clinicians are reporting treating failures with common agents. Appropriate actions to address this growing problems and appropriate changes in STI management guidelines will depend on a proper assessment of the prevalence of resistance. At the time of writing of these guidelines, such an assessment has been commissioned by the National AIDS Control Programme. Its results will likely be reflected in future revisions of these guidelines. At the moment (without hard data to support change) it was felt that the guidelines should continue to suggest Quinolones as the first line therapy for Gonorrhoea due to their low cost and ease of use.

Using a flowchart

A flow chart is a diagram that takes its user through the possibilities based on their clinical findings (history or examination). It has a starting point which is the symptom that brought the patient to care. From this a series of yes/no possibilities are listed in a sequence. Once the clinician decides upon each of the possibilities, they move on down the flowchart, eventually they arrive at the final point of the chart which tells them whether some treatment is warranted and if so describes that treatment in detail. The purpose is to standardize such treatments for use by clinicians of all levels of skills. These can (and are) be used by non-doctor clinicians as well and appear to have similar level of quality.

Ensuring proper treatment:

[§] Drug treatment of HIV is comprehensive and a specialty by itself. It is addressed in detail in the "Guidelines for Antiretroval Therapy – The National AIDS Control Programme", and will not be addressed here.

[**] Some resistance has been observed to Macrolides (Erythromycin, Azithromycin) in syphilis in various parts of the World. Little or no resistance has been documented against Penicillins

Good STI treatment means that the patient is cured of their infection AND future infections are prevented. This means that certain measures are taken during the treatment by the provider and the patient to ensure effective treatment; and certain other measures are taken by the patient to avoid re-infection in future. Some of the main concerns are incomplete treatment (either not taking enough medicine, taking it improperly or finishing treatment before cure has been affected – usually stopping medicines when symptoms disappear) or re-infection. Re-infection occurs from either patient re-acquiring infection from a new partner or most commonly since they may have infected their regular partner, once the patient is treated, they may acquire infection from their regular partner who is now infected. These concerns are addressed in the next paragraph.

Partner Management:

As discussed, one of the commonest reasons for recurrent infections is re-infection from patient's regular partner. In effect the patient gets infected and then infects their regular partner who may or may not develop symptoms. Once patient is cured, they have sex with their regular partner (who is still infected) and get re-infected. In order to deal with this possibility a variety of measures have been tried. Two of the more popular measures are either to provide patients with cards that can be given to their partners. Alternatively the patient may be given either medicines or prescriptions to be given to their partners (the same medicines that are being provided to the patient). This latter approach seems to have some favor in Pakistan. Some general practitioners report partial success with this approach. At the moment we are endorsing that providers try preferably this approach although if they feel that the card approach is better for their setting then they should use it as well. In this regards it should be emphasized that the patient is to avoid all sexual contacts until one week after completion of treatment.

Prevention:

Consider the 4Cs to improve treatment results and prevention …

Prevention is better than cure. It prevents the misery and the other problems that STIs bring. The best prevention strategy is to avoid or reduce extramarital sexual contacts. In practice this means **reducing the number of partners** that a patient will engage in sexual activity with. Once sexual contact is initiated, **condoms** provide the best available protection. Additionally all patient who have STIs are also at risk for acquiring HIV since STIs and HIV are transmitted with sexual contact. All such patients must consider testing for HIV, particularly since effective treatment for HIV is now available in Pakistan. Finally, since Syphilis is often asymptomatic, all patients presenting with STI symptoms should be considered fro syphilis testing. In essence these guidelines deal with secondary prevention in the classic public health paradigm, where a patient must learn to prevent future infections after having acquired an STI at least once.

For this purpose the **4Cs** principle has been adapted and presented below:

The 4Cs - Compliance, Counseling, Condoms and Contact (Partner) Management
Compliance: *STI patients must be encouraged to comply with their prescribed treatment* • Instruct all patients to complete the full course of treatment. • **Disappearance of symptoms during treatment does not mean that the patient is cured** • Without proper treatment, STIs may cause severe complications

- Patient should avoid sexual contact during the treatment and until partner has been treated
- Ensure a follow-up visit

Counseling for prevention: *Every patient presenting with STI symptoms must receive and understand education messages tailored for each patient regarding:*

- STIs result from Sexual contact
- Information about safer sex practices and use of condom
- The mode of transmission of STIs, including HIV
- STI augments the risk of HIV transmission
- Offer HIV voluntary counseling and testing (VCT)
- Consider syphilis testing

Condom use: *To minimize the further transmission of STIs, including HIV, it is essential to educate all clients on the proper use of condoms:*

- Demonstrate to each patient how to use a condom correctly
- Clinic should supply condoms to STI patients

Contact management: *Patients must understand the importance of partner management even if he/she is asymptomatic:*

- Risk of re-infection from asymptomatic partner
- Risk of complications for his/her partner
- Possible ways of partner management include:
- Providing additional treatment regimens for the partner
- Encouraging partners to come to the clinic for treatment

EVIDENCE BEHIND THE GUIDELINES

Typically the algorithms have been validated in 2 different practice settings, i.e. Primary care or obstetrical care for the general population (where the prevalence or burden of STIs may be low) and in STI clinics (where such prevalence is high). Baseline prevalence impacts the accuracy of these algorithms. Other factors that impact this accuracy are the organism(s) that typically cause a particular syndrome. For e.g., NG infections correlate very well with clinical assessment and Trichomonas does so infrequently. This means that syndromes that are predominantly caused by NG will be better managed using clinical criteria and syndromes that are predominantly caused by TV will be less effectively managed with clinical assessment.

The next question is whether some or more use of laboratory testing adds to the clinical accuracy of the STI management algorithms. In this case it is vital to remember that for many of those organisms that are difficult to assess clinically are also the ones that are difficult to assess with tests. Individual algorithms and accuracy of tests in their diagnosis is discussed below.

Urethral Discharge (UD)

This has the best support[13]. Primarily much of UD is caused by either NG or CT. NG correlates very well with clinical observations and CT less well but in most settings the correlation with CT is appropriate enough. Sensitivities for the algorithms range from 87 to 99[14-18]. Inclusion of laboratory testing adds a little more to the sensitivity of the algorithm. Specificity was more complicated. Addition of microscopy adds slightly to specificity of diagnosis of NG but not CT[19]. The algorithm performs well in either the primary care or STI clinic settings.

In the balance considering the expense of laboratory testing plus the difficulty of arranging the logistics of the same, there seems little advantage to addition of laboratory support to the algorithm for Urethral discharge.

Genital Ulcer Disease (GUD)

The predominant organisms that cause GUD are syphilis, herpes, lymphogranuloma venereum (LGV) and chancroid. The sensitivity of the algorithms for detecting syphilis and chancroid is high, ranging from 72 to 100% and around 68-100% for cure[16,20-23]. The WHO algorithm was also tested and found to highly sensitive and specific for syphilis and chancroid either with or without laboratory help, but did not perform well for herpes (sensitivity: 4.5%). Laboratory support did not substantially increase sensitivity for Herpes[22].

Vaginal Discharge

Vaginal discharge is due to either vaginitis (caused by T. vaginalis, C. albicans or agents of bacterial vaginosis) or cervicitis (caused by N. gonorrhoeae or C. trachomatis). The main issue with vaginal discharge algorithms are two-fold. One that they all require a woman to present for care, when many STIs in women may be asymptomatic. Secondly, some vaginal discharge is normal in most women and so a great many women present for care with what is essentially a physiologic discharge.

Among symptomatic women who present for care the VD algorithms are reasonably sensitive (73 to 93%)[16,22,24-26]. For all women being screened for STIs the algorithms are less sensitive (29-86%)[27-29]. As can be imagined all of these algorithms perform better in STI clinics and other venues that care for women with higher risk of having an STI as compared to those that care for low risk populations (i.e. general practice settings, ANC and obstetrical services for general populations).

Speculum examination typically does not add to the reliability of the algorithm[30-33].

Considering that the algorithms work better if implemented in high risk populations, some investigators have attempted to determine the risk of STIs in women undergoing VD algorithms. Unfortunately these have not been very helpful and have added little to clinical outcomes[34-37].

Anal Symptoms

While anal symptoms (pain or discharge) are frequent among individuals who participate in receptive anal intercourse, no standardized guidelines exist for their syndromic management. In the interest of managing this complex problems, a set of guidelines has been proposed after consultation with local and international experts.

Chancroid and Inguinal buboes

Based on clinical observations of practitioners in Pakistan, it was felt that both lymphogranuloma venereum (LGV) and Haemophilus ducreyi (chancroid) are rare in Pakistan[††]. While no epidemiological data exist about these infections in Pakistan, during interviews and workshops for this project, we consulted over 50 clinicians from all parts of Pakistan, each with at least 10 or more years of clinical experience of managing STIs. Between all of them, none had seen more than 10 cases of chancroid and virtually all report seeing hardly any inguinal lymphadenopathy. It was therefore decided that in order to simplify the regimens, neither LGV nor chancroid are addressed in these algorithms. Furthermore, the algorithm for inguinal buboes is also not addressed here for the same reason.

[††] In the absence of scientific studies on the subject, over 50 providers were interviewed with most having 10 or more years of clinical experience in STI care (seeing 2-5 patients daily). Not one of them could recall seeing more than 10 chancroid cases in their career. Inguinal lymphadenopathy was also rarely reported. While this is not a scientifically accurate estimate, it was felt that both chancroid and LGV are clinically rare in Pakistani clinical experience.

INFORMATION GATHERING: HISTORY AND THE EXAMINATION

This is the most critical part of management of STIs since syndromic diagnosis is exclusively based on a good ***history*** and ***inspection*** of the external genitals. For personal safety of the clinicians, the *use of gloves is strongly recommended*. This section focuses on management for six STI syndromes only. It does not take account of STI such as scabies or lice, treatment of which routinely cared for by the clinicians.

We start with a discussion of rapport building since this is the foundation of a good clinician-patient encounter and much of the accuracy of history and examination is based on good rapport between the clinician and the patient.

Rapport building

While some people are naturally good at public communication, for others these skills (of communication) can be taught and learned. Any communication has some verbal and some non-verbal components.

First steps to starting the patient encounter are

1) Smiling and a welcoming tone of voice
2)
3) Introduce yourself
4) Using the patient's name
5) Offering a seat
6) Begin history taking only when privacy is available
7) Make eye contact
8) Be respectful and understanding
9) Do not be judgmental
10) Do not display surprise or shock at what the patient says or presents with

Important parts of the history taking

1) Asking open questions
2) Allow patient to maintain their dignity
3) Treat with respect, be polite and do not push for answers the patient is obviously uncomfortable in giving (this does not mean that you should not probe, but rather to not aggressively push to get the answers)
4) Be aware of the local terms used for conditions or body parts. The terms you should familiarize yourself with are:
5) Facilitate patient in describing their condition or symptoms
6) Direct the patient to the subject (their symptoms and their description) as needed

You should be familiar with local terms for these

- Vaginal discharge
- Urethral discharge
- Pain on urination
- Vaginal irritation
- Lower abdominal pain in women
- Pain during sexual intercourse
- Itching in genital area
- Usually also names of genitalia used in the community
- Genital ulcers or sores
- Failure to pass urine
- Gland swelling
- Pain and swelling in testicles
- (to a man) can you milk your urethra
- (to a woman) can you spread your labia with your fingers

7) Summarize what patient has said, this helps in checking that you and the patient both have the same idea of what is being discussed
8) Empathize. Display to the patient that you understand what difficulty their symptoms and related issues (embarrassment etc) are causing them
9) Reassure patients that you are there to help and will do all that is possible to do so
10) Express a relationship with the patient in dealing with the problem together

The 5 Ps help to assess the risk of patients

- Partners
- Prevention of Pregnancy
- Protection from STIs
- Practices
- Past history of STIs

History:

Beyond the usual basic information about name, age etc, a risk assessment is very helpful (see box for the 5 Ps). Additionally asking open ended questions allows patients to express their own history more fully and reduces the chances of missing out crucial details. In a history, following are pertinent for disease diagnosis:

Presenting illness:

Men:

- Urethral discharge: pain during urination? Frequency?
- Scrotal swelling: history of trauma?
- Genital ulcer: Pain? Is it recurrent, appearance? Spontaneous onset?
- Other symptoms: itching or discomfort

Women:

- Vaginal discharge: pain on urination? Frequency? STI risk behaviors
- Lower abdominal pain: vaginal discharge or bleeding?
- Painful or difficult pregnancy or childbirth
- Painful or difficult or irregular menstruation
- Missed or overdue period
- Genital ulcer: Pain? Is it recurrent, appearance? Spontaneous onset?
- Other symptoms: itching or discomfort

Always ask if a patient has other complaints (other symptoms) as more than one syndrome may be present.

Medical History

- Any past STI – type? Dates? Any treatment and response? Results of tests?
- Other illness – type? Dates? Any treatment and response? Results of tests?
- Medications being taken currently
- Drug allergies.

Sexual history

Example 1: An interview with closed questions

Patient: *"I have a pain in my tummy."*
Service provider: *"I'm sorry to hear that. Where is the pain?"*
Patient: *"Here."*
Service provider: *"Is the pain constant?"*
Patient: *"No."*
Service provider: *"Does it feel tender?"*
Patient: *"Yes."*
Service provider: *"When did the pain begin?"*
Patient: *"Last week."*

Example 2: An interview with open questions

Patient: *"I have a pain in my stomach."*
Service provider: *"I'm sorry to hear that. Tell me about this pain."*
Patient: *"Well, it started a week ago. At first I just felt tender down here, but sometimes it begins to hurt a lot. It hurts when I sit down or stand up – it isn't like my monthly pain at all."*
Service provider: *"What else is troubling you?"*
Patient: *"Well, there is one other thing. There's a funny kind of water that I don't usually get. It doesn't hurt but it's embarrassing."*

In the second example, the service provider gathers much more information, simply by using open questions: *"Tell me about this pain"* and *"What else is troubling you?"*. You might also agree that the patient seems more comfortable than in the first example: perhaps she feels in control of the interview.

- Currently active sexually?
- New partner in the last three months?
- Risk assessment.

Training exercise

Ask training participants how they would ask these questions and have other participants share their views of how they would do the same

The **physical examination of women** may include, where possible, an int*ernal pelvic examination* involving:

a) Bimanual examination to check for active PID; shape, size and position of uterus for uterine masses, for example, pregnancy and

b) Speculum examination to check for the nature of the vaginal discharge, purulent cervicitis and/or erosions.

If a microscope or laboratory facilities are available, obtain specimens of cervical and vaginal secretions for diagnostic studies. While these modalities (a speculum examination and microscopy and other laboratory facilities) slightly enhance the quality of diagnosis and therefore the treatment provided, there is evidence that for most part the advantage gained from them is marginal. On the other hand adding these to regular guidelines, significantly limits by whom and where these guidelines are applied. In the balance it is felt that these modalities are not addressed or recommended in these guidelines. Clinicians may use them when they feel they are necessary and given the context of their own practice.

Examination:

It is best to have both male and female patients to lie down comfortably on a couch for a genital examination. Ideal exposure for men is from the hip to knees, and for women is from chest to knees. The patient should be covered with a sheet to maintain dignity and respect.

Where a couch is not available a male patient may be examined standing up, but this is not ideal. In such a case an explanation should be given. The patient should be asked to expose the area from the chest to knees for examination.

Examining male patients for STI syndromes

- Palpate the inguinal region in order to detect the presence or absence of enlarged lymph nodes and buboes.
- Palpate the scrotum, feeling for individual parts of the anatomy:
  - testes
  - spermatic cord
  - epididymis.
- Examine the penis, noting any rashes or sores. Then retract the foreskin if present, and look at the:
  - glans penis
  - Urethral meatus.
- If you cannot see an obvious urethral discharge, milk the urethra or ask the patient to milk the urethra gently in order to express any discharge.
- Record the presence or absence of:
  - Ulcers
  - Urethral discharge, noting the color and amount.
  - Buboes

Examining female patients for STI syndromes

- Palpate the abdomen for pelvic masses and tenderness, taking great care not to hurt the patient.
- Palpate the inguinal region in order to detect the presence or absence of enlarged lymph nodes and buboes.
- Ask the patient to bend her knees and separate her legs, and then examine the vulva, anus and perineum.
- Record the presence or absence of:

    - Ulcers
    - Vaginal discharge, noting the color and amount.
    - Buboes

SYNDROMES AND THEIR FLOWCHARTS

Urethral Discharge

Urethral Discharge is usually caused by Gonorrhoea or Chlamydia or both. Diagnosis of these infections based on the finding of urethral discharge is highly accurate.

The algorithm starts with the presentation (history) of a urethral discharge, as stated by the patient. This should then be confirmed by the clinician on examination. The best way to do this is for either the clinician or the patient to milk the penis. If pus is expressed from the urethral meatus, the diagnosis is confirmed. Pus present around the meatal opening from before is also highly suggestive of the diagnosis although to avoid fabrication of findings by the patients, it may be desirable for the clinician to witness pus being expressed from the urethra. Always remember to look under the prepuce if the patient is not circuscised.

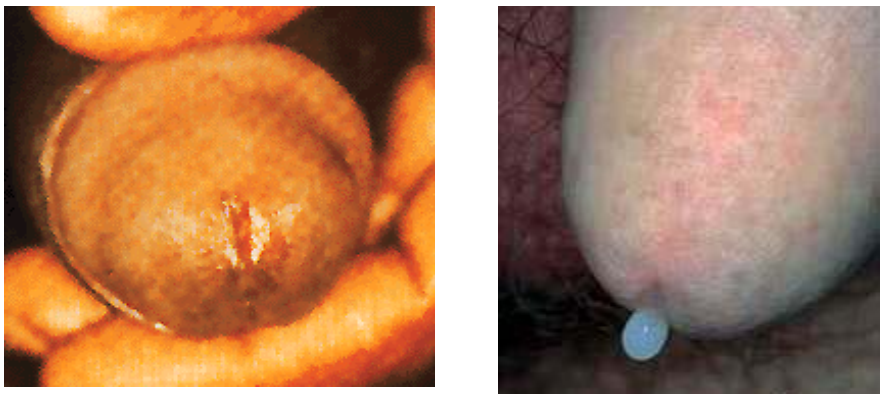


Expressing discharge from Urethra

Once diagnosis is confirmed, the main diagnosis is that of Gonorrhoea, Chlamydia or both (a proportion of patients may have simultaneous infection with both). The algorithm therefore guides the clinician to treat for these diseases.

If no discharge is confirmed but another genital disease (ie genital ulcers) is found, appropriate management of that condition is warranted.

If no abnormality is found then the patient must be reassured. In addition counseling to reduce risky sexual behaviors should be carried out.



Discharge from Urethra

All patients who present for management of STIs (whether or not they are subsequently diagnosed with an STI) must be counseled on the usage and be provided with condoms when possible.

Persistent or Recurrent Infections

These are infections that continue to bother the patient a week or more after receiving adequate treatment. They usually represent either treatment non-adherence (patient did not take the medicine you gave them), treatment failure (usually due antibiotic resistance in gonococci), re-infection or missed other diagnosis.

Non-adherence with medicines is common in Pakistan. Many factors lead to it, including lack of confidence of the patient in the diagnosis, the doctor or the medicine. This latter category also includes the common belief that many patients have about "thandi" or "garam" medicines. An additional factor is side effects from the medicines may lead to pre-mature discontinuation of medicines by patients. These can only be addressed via appropriate counseling.

Treatment failures are usually the result of resistance of the gonococci to common medicines. The situation with this resistance is in Pakistan is unclear. However, many clinicians indicate that they see patients return with persistent symptoms after receiving either Ceftriaxone or Quinolones (Ciprofloxacin, Ofloxacin or Levofloxacin). It is advisable to choose the antibiotic that seems to work better in your community.

Re-infection is commonly from 2 sources. One if the partner of the patient is also infected and remains treated, the patient may get re-infected when they next have sex with their partner. Secondly, if after receiving treatment, the patient again has sex with a new infected partner, they can get re-infected. For this reason, it is essential to address partner treatment as well. This is a delicate issue. Often such discussion is difficult. For the moment we recommend that at the very least the clinician should explain this concern to the patient and if they are agreeable suggest that the patient also provide the same medicines as they are receiving to their partner.

Finally it is always possible that some findings were missed or not brought to the clinician's attention during the first visit. It is always good practice to re-inquire about the complete range of symptoms that the patient is experiencing.

Genital Ulcers

Genital ulcers are confirmed on examination. The main distinction is between an ulcer (or sore) or a vesicle (blister). A vesicle is usually HSV. On the other hand a sore or ulcer can be either syphilis, HSV or both. It is important to note that often it is impossible to clinically distinguish between ulcers from syphilis and HSV; therefore clinicians are advised to treat for both diseases when they see ulcers.

An important consideration in management of genital ulcers is among those whose ulcers do not heal or heal slowly. The algorithm presents a schema for dealing with such cases.

Finally HSV increases the rate of transmission of HIV when a client or their partner are infected with both those infections. This increase in transmission happens when either of the partners is infected with these viruses.



Vulvar ulcer - HSV



Vulvar ulcer – Primary syphilis



Penile ulcer - HSV



Peri-vaginal Primary Herpes



Penile ulcer – primary syphilis



Penile Vesicles - HSV

As always, please:

- Wear gloves
- Counsel for risk reduction and condom use.

- Offer condoms when possible.
- Offer to treat patient's partner(s).

Scrotal Swelling

Infectious scrotal swelling is usually orchitis (testicular infection), epidydmitis or both due to either Gonorrhoea or Chlamydia, and is a complication of urethritis from these organisms.

If a surgical evaluation is needed, it's usually an emergency. If you don't know of a surgeon or a urologist that you can send patients to, then please send them to the nearest emergency/ casualty department. Other alternatives may be private hospitals in your area that take emergencies.

Following confirmation of scrotal swelling on examination, the main therapeutic consideration is to distinguish infection related scrotal swelling from testicular rotation, trauma or tumor (all of which require surgical evaluation). These causes are even more important part of the differential among men over 35 who have no risk factors for STIs and in young boys.

It is useful to remind patients that scrotal swellings particularly that are due to past trauma may take a long time to resolve….

Anal symptoms

Anal symptoms mainly happen among those who indulge in receptive anal sex. This includes men, women and Hijras. Most patients may not bring this complaint up freely and therefore it is necessary that if suspected (based on the clinician's understanding of the patient's risk profile, these questions should be inquired.

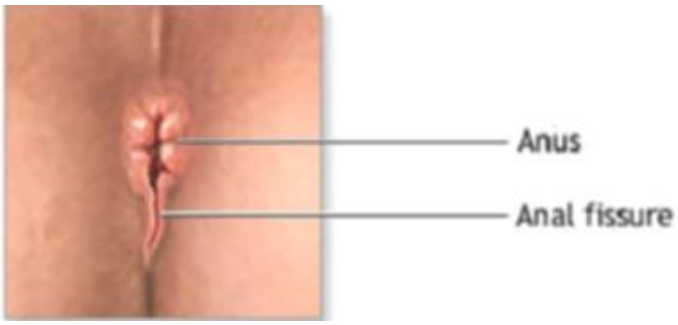
Mainly 2 anal symptoms are addressed. First is anal discharge. This is mostly due to Gonorrhoea, Chlamydia or rarely HSV-2. As in urethral discharge, anal areas should be inspected in order to verify anal discharge. Once discharge is confirmed by the clinician, appropriate management may be carried out. Expressing pus from anus is not needed.

The other symptom is anal pain. This again can be due to the same causes (Gonorrhoea, Chlamydia or HSV-2) along with ano-rectal fissures and hemorrhoids. Latter 2 will need referral to surgery; the first 2 are managed by the clinician as outlined. Although peri-anal warts are seldom painful, most patients will only notice them when directed to them by some other symptom such as pain.

Use of a *proctoscope* when examining anus is desirable. It allows examination of the rectal vault and therefore allows diagnosis of a number of cases of HSV-2 which would otherwise be not seen. However considering that not many clinicians know how to use it or are trained in its use, we are not recommending its routine use at the moment. In the future as experience with anal STIs increases training clinicians on the use of proctoscope may be included in trainings fro STI management.



Courtesy CDC, USA
Anal Warts



Anal Fissure

Vaginal Discharge

Most women have some vaginal discharge normally. This is called "physiological discharge". Usually its less than about 1-2 tablespoons a day but the exact amount varies with the phase of the menstrual cycle, during and after sexual activity/ arousal, during pregnancy and lactation. Typically it will not itch or cause discomfort or pain. Although there is no smell, some odor may happen as a consequence of poor hygiene.

Only those women who spontaneously present with the complaint of vaginal discharge should be treated with this algorithm. This algorithm does not work well if the provider has to elicit a history of vaginal discharge from a woman who has not herself complained of this.

Both Vaginitis and Cervicitis may lead to abnormal vaginal discharge. Significant differences between are important to remember, although clinically it is often difficult to distinguish if the discharge is vaginal or cervical in origin. When there is a high risk of Gonorrhoea or Chlamydia (among members of high risk groups such as sex workers) or with those patients who have high number of sex partners (or their partners in turn engage in sex with a large number of partners), these algorithms work very well. They work less well where such risk assessment is not possible and most cases are due to vaginitis rather than cervicitis.

Candida vaginitis is common among many women. Certain factors such as diabetes, overweight, possibly psychological stress all predispose women to this condition.

As always, please:

- Wear gloves
- Counsel for risk reduction and condom use.
- Offer condoms when possible.
- Offer to treat patient's partner(s).

Abdominal Pain

This symptom syndrome is mainly applies to women. The main concern here is that of pelvic inflammatory disease (PID), which is the infection of the upper genital tract – the uterus (called endometritis), fallopian tubes (salpingitis), ovaries (oophritis) or the pelvic cavity (peritonitis). These are complications of infections with gonorrhoea, Chlamydia or uncommonly with anaerobic bacteria (particularly when there is a history of instrumentation including placement or retention of an IUCD). These conditions lead to persistent pelvic discomfort, infertility or even death if left unattended.

Many women usually present late with these problems and the delayed usually allows the complications to set in. It is therefore very important that early diagnosis and treatment be carried out. This in turn requires a high level of suspicion for these conditions, particularly in Pakistan where STIs are infrequent among general population and therefore clinicians don't see many of these complications.

Women with PID usually complain of chronic vaginal discharge and lower abdominal pain. Other findings are pain during sex (dyspareunia), abnormal uterine bleeding, painful urination, pain during menstruation, fever and sometimes nausea and vomiting. As is apparent no one feature itself is sufficient for a diagnosis of PID.

This algorithm is somewhat different from others in that a more detailed history is required. Specific questions that should address erratic bleeding, missed or overdue period, recent delivery, abortion, miscarriage, placement of an intrauterine contraceptive device (IUD or IUCD) – recently or a while ago.

Criteria for hospitalization in PID

- **Pregnant patient**
- **Cannot exclude surgical emergencies (ie appendicitis)**
- **Severe illness: Nausea and vomiting or Fever >39°C,**
- **Severe pain (enough to interfere with daily life)**
- **No response to oral medicines**
- **Unable to take or can not tolerate oral medicines**
- **Evidence of a tubo-ovarian abscess**

Examination findings that are important are fever, abdominal tenderness (including rebound tenderness), guarding, abdominal mass.

When you gently press on the abdomen and then suddenly let go, severe pain may result and is called "guarding". This suggests peritonitis. The presence of a mass suggests an intra-abdominal or intra pelvic abscess. This is usually a tubo-ovarian abscess. Presence of vaginal bleed should suggest ectopic pregnancy or abortion (or miscarriage). Abnormal vaginal discharge should suggest a pelvic, cervical or vaginal infection.

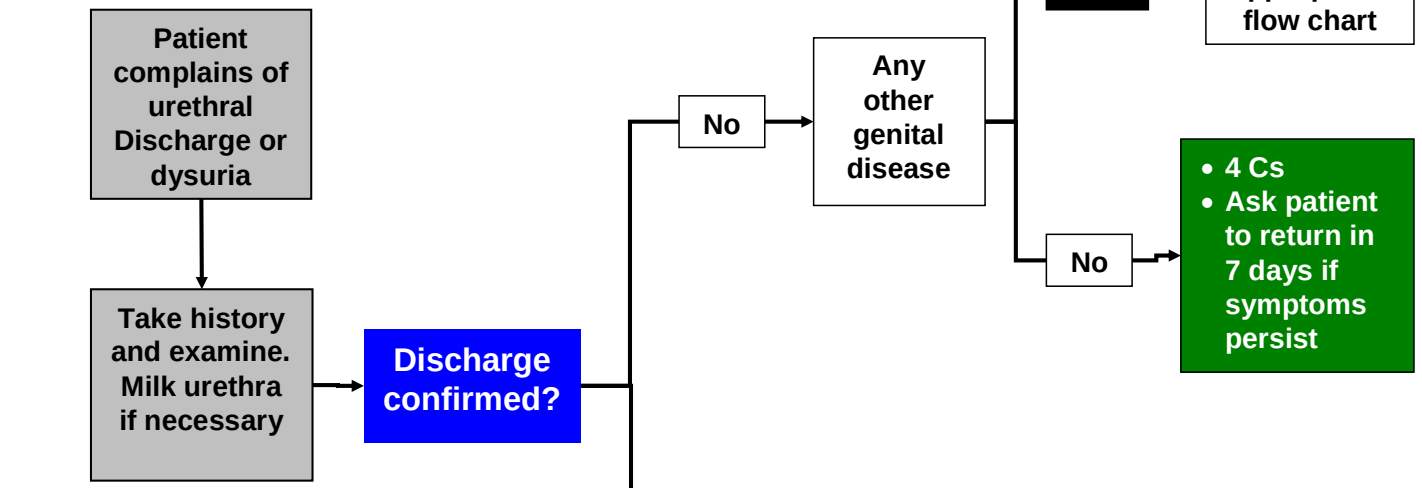
Cervical motion tenderness is a useful sign when present. When the cervix is moved on examination, it causes discomfort. In case of PID or cervicitis this motion leads to severe pain.

Appropriate referral is necessary in appropriate care and is part of nearly all algorithms. However it is probably the most important in this algorithm where not referring a patient is most likely to be met with poor outcomes including death.

Finally given all the uncertainties in this clinical scenario, great deal of emphasis is placed on timely follow up. In this regard a follow up after 5 days is recommended.

Vaginitis	Cervicitis
Caused by Trichomoniasis (TV), Candidiasis and Bacterial Vaginosis	Caused by Gonorrhoea and Chlamydia
Most common cause of vaginal discharge	Less common cause of vaginal discharge
Easy to diagnose	Difficult to diagnose
No complications	Major complications
Treatment of partner unnecessary, except for TV	Need to treat partner

URETHRAL DISCHARGE



4 Cs:

1. Compliance Counseling
2. Promote & provide Condoms
3. Counseling for STI prevention, HIV testing; Educate and Reassure patient
4. Partner (Contact) treatment

TREATMENT OF GONORRHOEA

Uncomplicated Anal/ Genital Infection

Ciprofloxacin 500 mg orally once only
(Ciprofloxacin is contraindicated in pregnancy and for children or adolescents)
OR
Cefixime 400 mg orally once only
OR
Ceftriaxone 125 mg IM once only
OR
Spectinomycin 2 gm IM once only

Disseminated Gonococcal infection

Ceftriaxone 1 gm IM or intravenous once daily for 7 days
OR
Spectinomycin 2 gm IM twice daily for 7 days

TREATMENT OF CHLAMYDIA

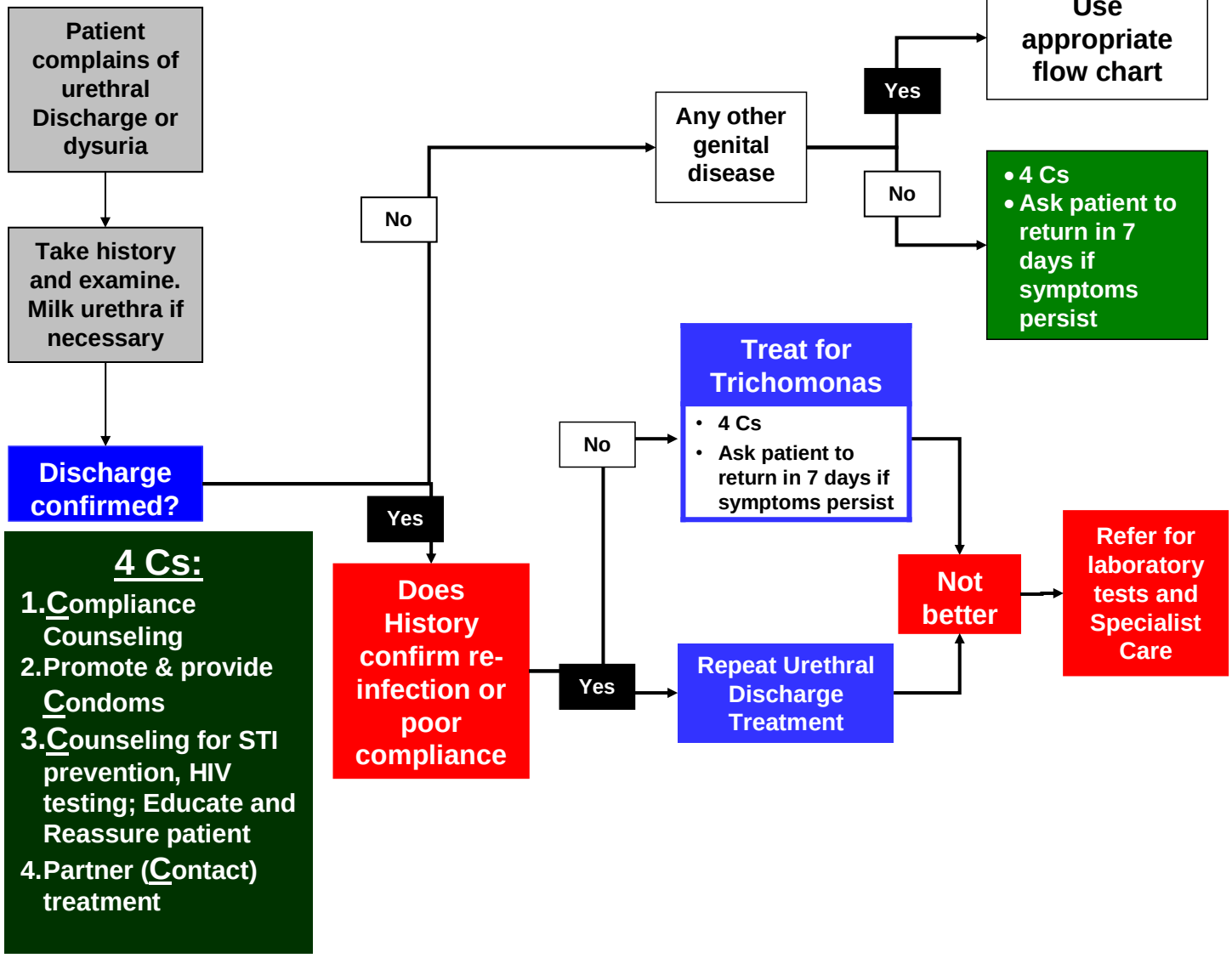
Uncomplicated Anal/ Genital Infection

Doxycycline 100 mg orally twice daily for 7 days
(Not to be used for pregnant women, children or adolescents)
OR
Azithromycin 1 gm orally once only

Alternative Regimens

Amoxycillin 500 mg orally 3 times a day for 7 days
OR
Erythromycin 500 mg 4 times a day for 7 days
OR
Ofloxacin 400 mg orally twice a day for 7 days
OR
Tetracycline 500 mg orally 4 times a day for 7 days

PERSISTENT URETHRAL DISCHARGE



TREATMENT OF GONORRHOEA

Uncomplicated Anal/ Genital Infection

Ciprofloxacin 500 mg orally once only
(Ciprofloxacin is contraindicated in pregnancy and for children or adolescents)
OR
Cefixime 400 mg orally once only
OR
Ceftriaxone 125 mg IM once only
OR
Spectinomycin 2 gm IM once only

TREATMENT OF CHLAMYDIA

Uncomplicated Anal/ Genital Infection

Doxycycline 100 mg orally twice daily for 7 days
(Not to be used for pregnant women, children or adolescents)
OR
Azithromycin 1 gm orally once only

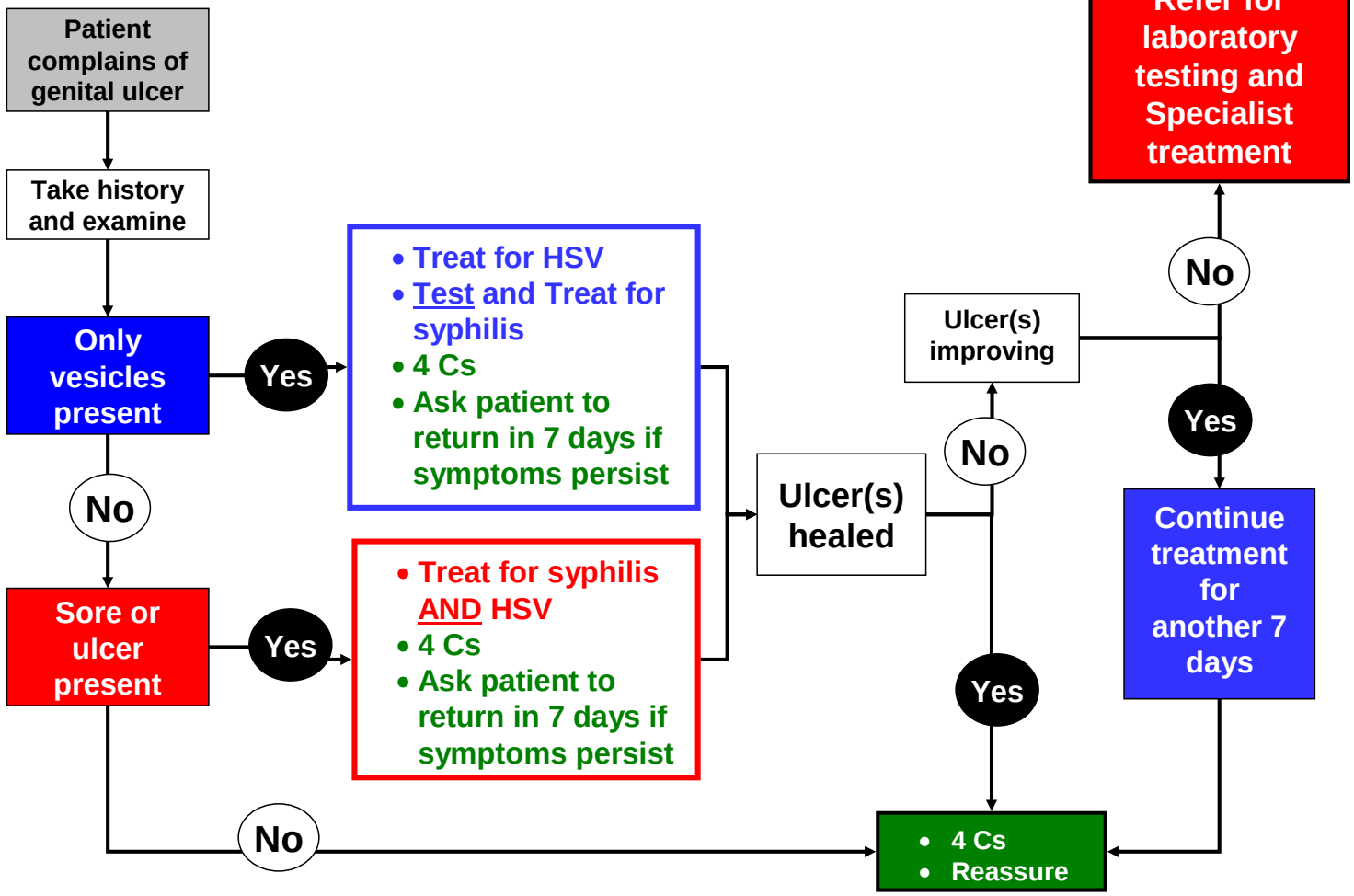
Alternative Regimens

Amoxycillin 500 mg orally 3 times a day for 7 days
OR
Erythromycin 500 mg 4 times a day for 7 days
OR
Ofloxacin 400 mg orally twice a day for 7 days
OR
Tetracycline 500 mg orally 4 times a day for 7 days

TREATMENT OF TRICHOMONAS

Metronidazole 400 or 500 mg orally twice daily for 7 days
OR
Tinidazole 500 mg orally twice daily for 7 days

GENITAL ULCERS



TREATMENT OF HSV-2

Treatment of First Episode:

Acyclovir 400 mg 3 times a day for 7 days

Treatment of Recurrent Episodes:

Acyclovir 400 mg 3 times a day for 5 days

Suppressive therapy:

Acyclovir 400 mg twice a day continuously

TREATMENT OF SYPHILIS

Early Syphilis (Primary, Secondary or Latent of less than 2 years duration)

Benzathine Penicillin 2.4 million IU intramuscularly once

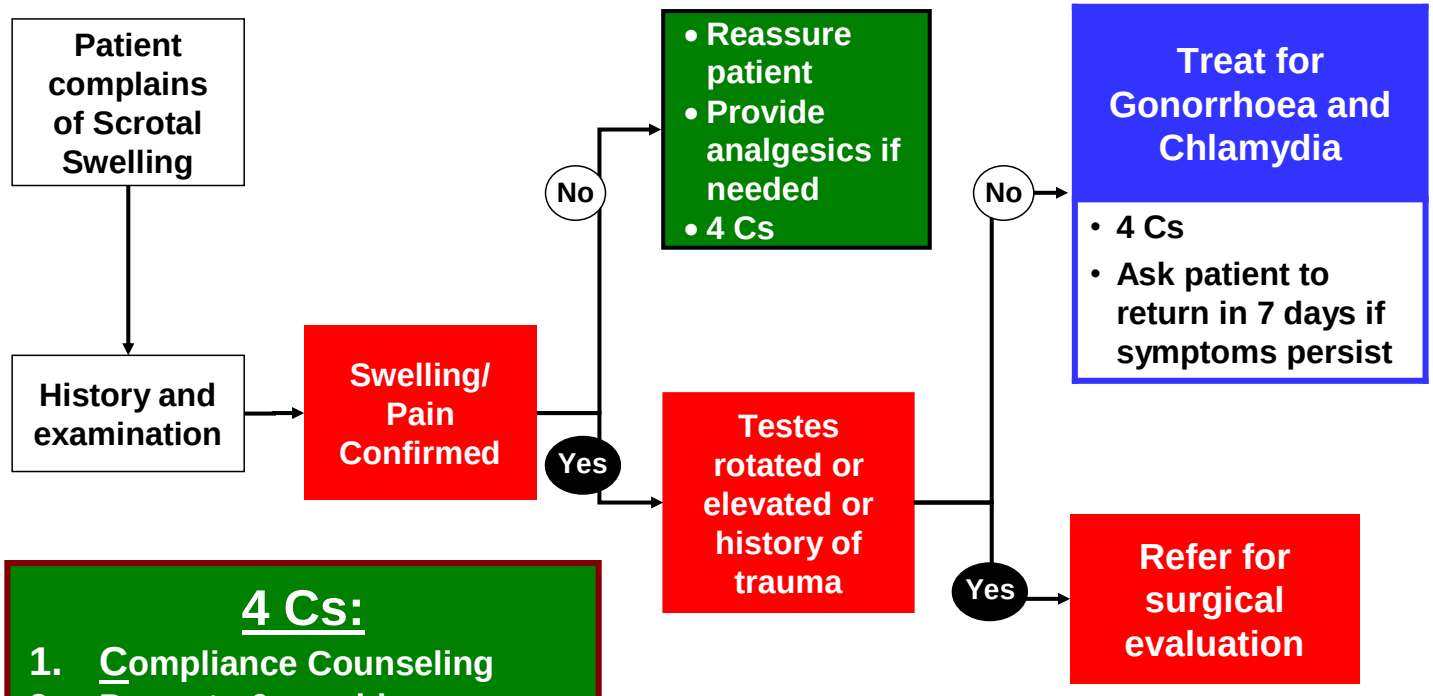
(Due to large volume it is recommended that this dose be divided and given as 2 injections sites)

For more detailed treatment of syphilis please see the attached sheet

4 Cs:

1. **C**ompliance Counseling
2. Promote & provide **C**ondoms
3. **C**ounseling for STI prevention, HIV testing; Educate and Reassure patient
4. Partner (**C**ontact) treatment

SCROTAL SWELLING



4 Cs:

1. Compliance Counseling
2. Promote & provide Condoms
3. Counseling for STI prevention, HIV testing; Educate and Reassure patient
4. Partner (Contact) treatment

TREATMENT OF GONORRHOEA

Uncomplicated Anal/ Genital Infection

Ciprofloxacin 500 mg orally once only
(Ciprofloxacin is contraindicated in pregnancy and for children or adolescents)
OR
Cefixime 400 mg orally once only
OR
Ceftriaxone 125 mg IM once only
OR
Spectinomycin 2 gm IM once only

Disseminated Gonococcal infection

Ceftriaxone 1 gm IM or intravenous once daily for 7 days
OR
Spectinomycin 2 gm IM twice daily for 7 days

TREATMENT OF CHLAMYDIA

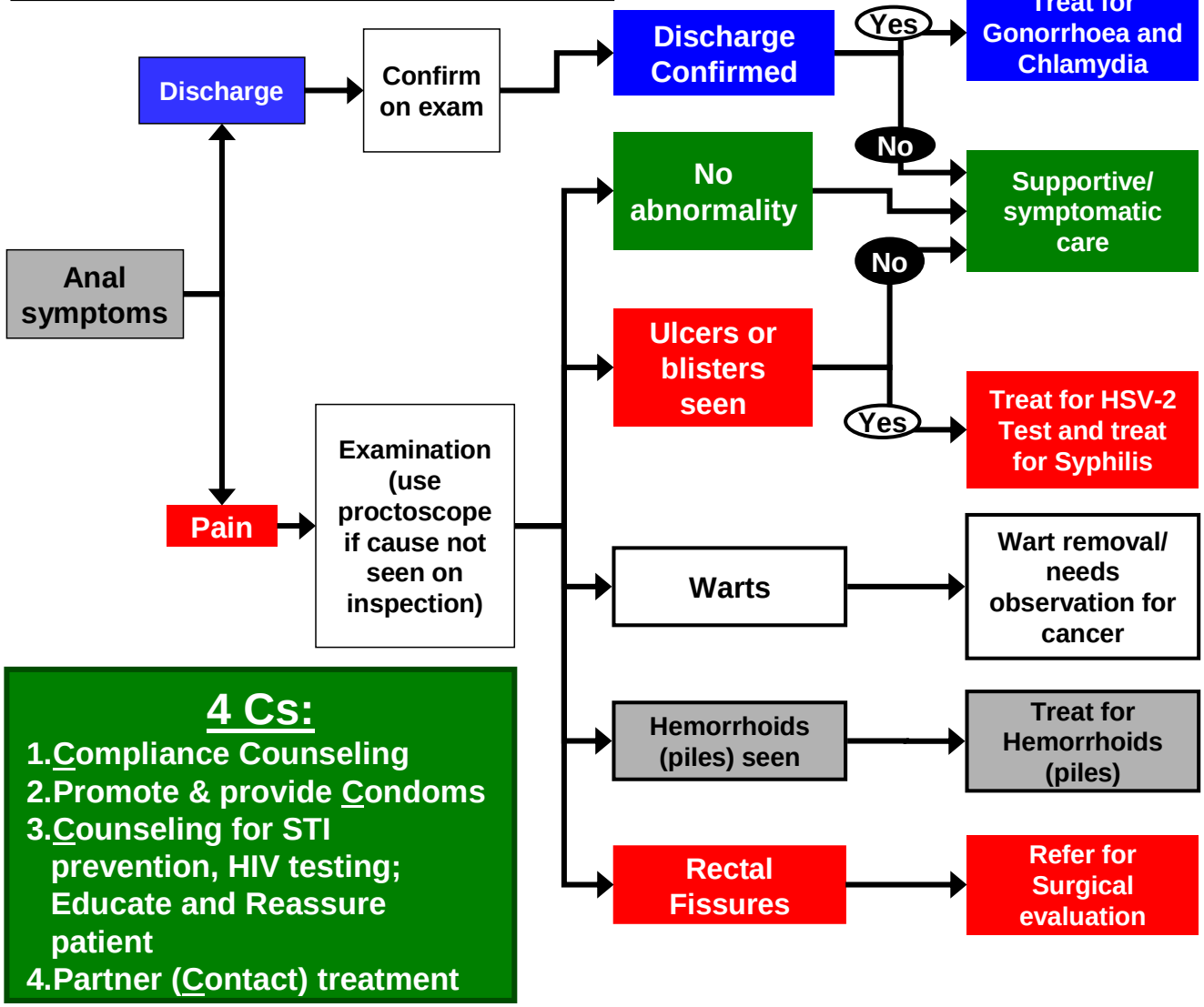
Uncomplicated Anal/ Genital Infection

Doxycycline 100 mg orally twice daily for 7 days
(Not to be used for pregnant women, children or adolescents)
OR
Azithromycin 1 gm orally once only

Alternative Regimens

Amoxycillin 500 mg orally 3 times a day for 7 days
OR
Erythromycin 500 mg 4 times a day for 7 days
OR
Ofloxacin 400 mg orally twice a day for 7 days
OR
Tetracycline 500 mg orally 4 times a day for 7 days

ANAL SYMPTOMS



4 Cs:

1. Compliance Counseling
2. Promote & provide Condoms
3. Counseling for STI prevention, HIV testing; Educate and Reassure patient
4. Partner (Contact) treatment

TREATMENT OF GONORRHOEA

Uncomplicated Anal/ Genital Infection

Ciprofloxacin 500 mg orally once only
OR
Cefixime 400 mg orally once only
OR
Ceftriaxone 125 mg IM once only
OR
Spectinomycin 2 gm IM once only

Disseminated Gonococcal infection

Ceftriaxone 1 gm IM or intravenous once daily for 7 days
OR
Spectinomycin 2 gm IM twice daily for 7 days

TREATMENT OF CHLAMYDIA

Uncomplicated Anal/ Genital Infection

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OR
Erythromycin 500 mg 4 times a day for 7 days
OR
Ofloxacin 400 mg orally twice a day for 7 days
OR
Tetracycline 500 mg orally 4 times a day for 7 days

TREATMENT OF HSV-2

Treatment of First Episode:
Acyclovir 400 mg 3 times a day for 7 days

Treatment of Recurrent Episodes:
Acyclovir 400 mg 3 times a day for 5 days

Suppressive therapy:

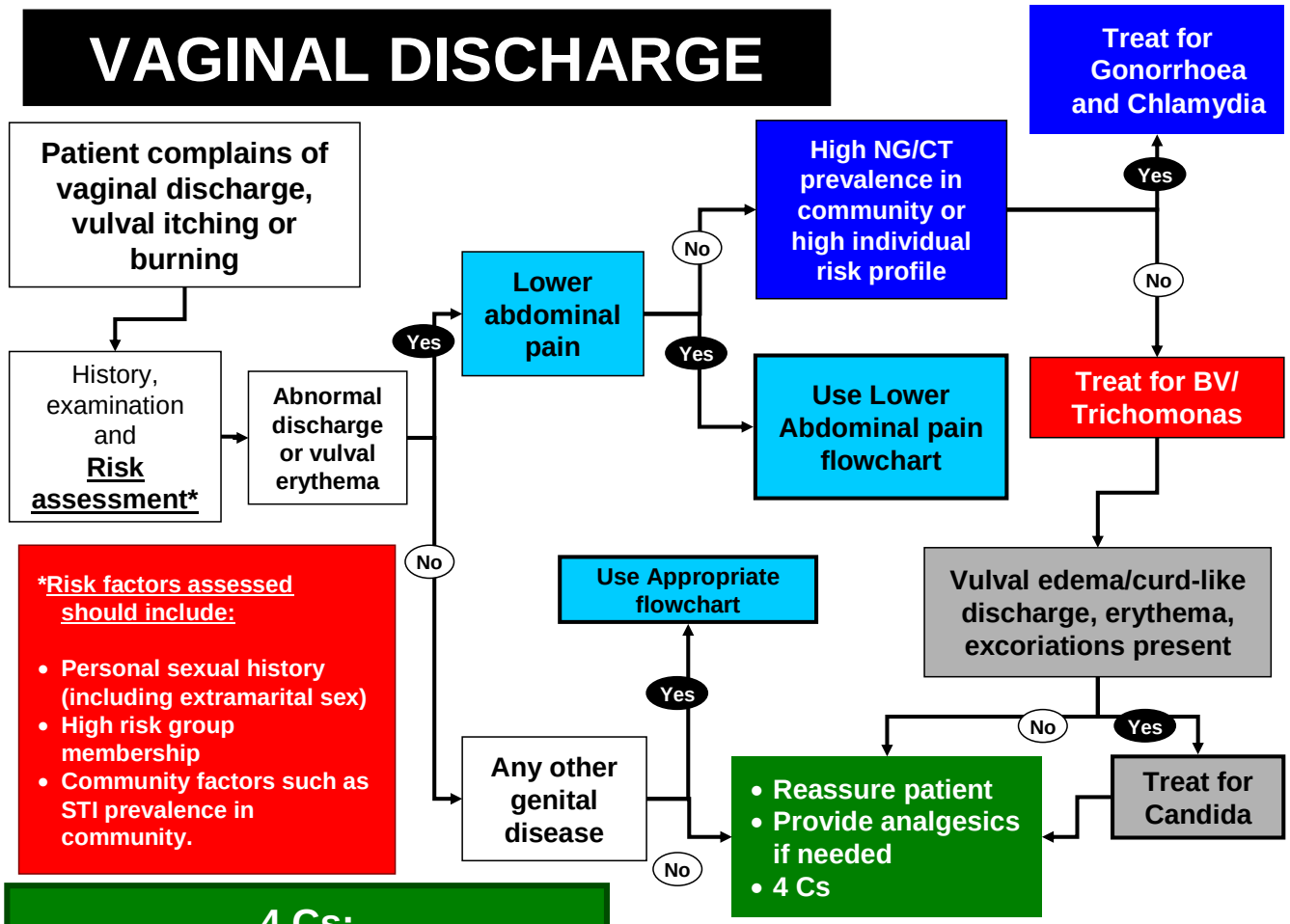
Acyclovir 400 mg twice a day continuously

TREATMENT FOR WARTS

Treatment is meant for external genitalia and vaginal. Please refer to gynaecologic specialist for cervical warts

Provider administered: **Podophyllin** 10-25% in compound of tincture or benzoin. Apply carefully avoiding normal tissue. External genital genitalia should be washed thoroughly in 1-4 hours. Allow the applied medicine to dry before removing speculum. Repeat application weekly as needed.
OR
Cryotherapy (when available). Repeat after 1-2 weeks as needed

VAGINAL DISCHARGE



***Risk factors assessed should include:**

- **Personal sexual history (including extramarital sex)**
- **High risk group membership**
- **Community factors such as STI prevalence in community.**

4 Cs:

1. **Compliance Counseling**
2. **Promote & provide Condoms**
3. **Counseling for STI prevention, HIV testing; Educate and Reassure patient**
4. **Partner (Contact) treatment**

TREATMENT OF CANDIDA

Miconazole or **clotrimazole** 200 mg intarvaginally daily for 3 days
OR
Clotrimazole 500 mg intravaginallly once
OR
Fluconazole 150 mg orally once
Alternate Regimen
Nystatin 100,000 IU intarvaginally daily for 14 days

TREATMENT OF GONORRHOEA

Uncomplicated Anal/ Genital Infection

Ciprofloxacin 500 mg orally once only
OR
Cefixime 400 mg orally once only
OR
Ceftriaxone 125 mg IM once only
OR
Spectinomycin 2 gm IM once only

Disseminated Gonococcal infection

Ceftriaxone 1 gm IM or intravenous once daily for 7 days
OR
Spectinomycin 2 gm IM twice daily for 7 days

TREATMENT OF CHLAMYDIA

Uncomplicated Anal/ Genital Infection

Doxycycline 100 mg orally twice daily for 7 days
OR
Azithromycin 1 gm orally once only

Alternative Regimens

Amoxycillin 500 mg orally 3 times a day for 7 days
OR
Erythromycin 500 mg 4 times a day for 7 days
OR
Ofloxacin 400 mg orally twice a day for 7 days
OR
Tetracycline 500 mg orally 4 times a day for 7 days

TREATMENT OF BACTERIAL VAGINOSIS

Metronidazole 2 gm orally once (also treats Trichomonas)
OR
Clindamycin 2% vaginal cream, 5 gm intravaginally at bedtime for 7 days
OR
Metronidazole 0.75% gel, 5 gm intravaginally twice daily for 7 days
OR
Clindamycin 300 mg orally twice daily for 7 days

Treatment during Pregnancy

First Trimester (only if treatment is imperative): **Metronidazole** 2 gm orally once
2nd or 3rd trimesters: **Metronidazole** 200- 250 mg 3 times a day for 7 days
Alternative regimen
Metronidazole 2 gm orally once
OR
Clindamycin 300 mg orally twice daily for 7 days
OR
Metronidazole 0.75% gel, 5 gm intravaginally twice daily for 7 days

LOWER ABDOMINAL PAIN

Patient complains of lower abdominal pain

History and examination (including gynecological exam)

Any of the following present:

- Missed or overdue period
- Recent delivery/ abortion/ miscarriage
- Adnominal guarding and/or rebound tenderness
- Abnormal vaginal bleeding
- Abdominal mass
- intrauterine device

Yes → Appropriate surgical or gynecological referral

No → **Cervical motion tenderness** or lower abdominal tenderness and vaginal discharge

No → Any other illness found → Appropriate management

Yes →
- Manage for PID
- 4 Cs
- Review in 5 days

→ Patient improved

No → Refer or Specialist care

Yes → **Continue until treatment completed**

- Reassure patient
- Provide analgesics if needed
- 4 Cs
- Ask patient to return as needed

4 Cs:

1. Compliance Counseling
2. Promote & provide Condoms
3. Counseling for STI prevention, HIV testing; Educate and Reassure patient
4. Partner (Contact) treatment

OUTPATIENT TREATMENT OF LOWER ABDOMINAL PAIN

Ceftriaxone 125 mg IM once only
OR
Spectinomycin 2 gm IM once only

PLUS

Doxycycline 100 mg orally twice daily for 7 days
OR
Tetracycline 500 mg orally 4 times a day for 7 days
(both Doxycylcine and Tetracycline are contraindicated for pregnant women)

PLUS

Metronidazole 400 mg orally twice daily for 14 days

ALL PATIENTS NOT IMPROVING WITH OUTPATIENT THERAPY MUST BE ADMITTED FOR FURTHER TREATMENT

SPECIFIC INFECTIONS AND THEIR TREATMENT

Gonorrhoea

Gonorrhoea is one of the commonest STIs and one of the first one for which treatment was considered as a public health problem. The causative organism is called Neisseria gonorrhoeae, which is a small gram negative coccus that lives inside white cells of the infected hosts. Under a microscope it appears in pairs. It is moderately easy to culture from patients, however special care is required and often these facilities are not available to most clinicians.

The infection with Gonorrhoea is common and has been recorded in nearly all countries, including Pakistan. Most common manifestations of Gonorrhoea are urethritis, proctitis (infection of the rectum) and pharyngitis (among those who participate in oral sex). All of these syndromes can happen among men and women. Among women Gonorrhoea most commonly presents as cervicitis.

More advanced infections also occur among patients. These include Pelvic inflammatory disease, disseminated gonorrhea, perihepatitis and neonatal ophthalmitis.

Pelvic inflammatory disease is usually the result of delay or lack of treatment of urethral or cervical infection. This occurs among women. Anatomically it is the infection of the fallopian tubes, ovaries or the pelvic cavity. Most commonly it presents with mild to severe pain, purulent vaginal discharge and altered menstrual periods. In more advanced forms it may lead to infertility and "frozen pelvis" which is the condition where advanced fibrosis happens in the pelvic cavity which essentially "freezes up" pelvic visceral such as fallopian tubes, intestines etc and lead to problems.

Common presentations of Gonorrhoea	
In men	**In women**
• Urethritis	• Cervicitis
• Proctitis	• Proctitis
• Pharyngitis	• Pharyngitis
	• Urethritis
Less common presentations of Gonorrhoea	
• Pelvic inflammatory disease	
• Disseminated Gonorrhoea	
• Perihepatitis	
• Neonatal ophthalmitis	

In disseminated gonorrhea the infection spreads all over the body. Most commonly this presents as monoarticular arthritis (infection of one joint), diffuse polyarthritis and dermatitis – where gonococcal pustules (pus filled blisters or vesicles) are present on large parts of the skin of the patient.

Another rare but important manifestation is Perihepatitis, where the capsule of the liver is inflamed. This usually presents as pain in the right upper quadrant of the abdomen.

Neonatal ophthalmia is the infectious conjunctivitis that newborns acquire during birth when the mother has gonococcal genital infection. This presents like any other conjunctivitis.

With proper treatment Gonorrhoea should be cured. On occasion (varies from community to community) some gonococci are resistant to common antibiotics. As yet there is no information about which antibiotics always work in Pakistan. Experience from different parts of the country is variable. In some places clinicians report treatment failures (persistent infection despite appropriate antibiotic therapy)

Treatment of Gonorrhoeae

Uncomplicated Anal/ Genital Infection

Ciprofloxacin 500 mg orally once only (Contraindicated in pregnancy and for children or adolescents)

OR

Ceftriaxone 125 mg intramuscularly once only

OR

Cefixime 400 mg orally once only

OR

Spectinomycin 2 gm intramuscularly once only

Disseminated Gonococcal infection

Ceftriaxone 1 gm intramuscular or intravenous once daily for 7 days

OR

Spectinomycin 2 gm intramuscularly twice daily for 7 days

Neonatal Ophthalmia

Ceftriaxone 50mg/ kg intramuscularly as a single dose

OR

Kanamycin 25 mg/ kg intramuscularly as a single dose

OR

Spectinomycin 25 mg/ kg intramuscularly as a single dose

with Ciprofloxacin (or closely related Levofloxacin or Ofloxacin) and others report similar problems with Ceftriaxone (Rocephin). The clinician is advised to use the pattern that they see in their own area or discuss with other colleagues in their own area to determine their choice of antibiotics.

Chlamydia

This is one of the commonest infections worldwide. Its main presentations include conjunctivitis – which is the leading cause of blindness in the World – genital infections (urethritis, epididymitis, prostatitis, proctitis, cervicitis, endometritis, salpingitis) and reactive arthritis. Complications from Chlamydia infections include: infertility, ectopic pregnancy and possibly spontaneous abortions (miscarriages).

Common presentations of Chlamydia

In men	In women
• Conjunctivitis	• Conjunctivitis
• Urethritis	• Cervicitis
• Proctitis	• Proctitis
• Epidydmitis	• Urethritis
• Prostatitis	• Endometritis
	• Salpingitis

Complications of Chlamydia

- **Infertility**
- **Ectopic pregnancy**
- **Miscarriage**

Chlamydia conjunctivitis is common and if untreated may lead to blindness from scarring of the conjunctiva and the under surfaces eyelids.

Genital infections in men are similar to those with Gonorrhoea, including their clinical presentations. In fact clinically it is impossible to distinguish between Chlamydia and Gonorrhoea among men. Among women it also causes similar clinical syndromes as Gonorrhoea but also causes more ascending infections of the female genital tract that lead to long term complications such as infertility, ectopic pregnancy or miscarriage in part due to the scarring caused by this infection.

No clinical resistance has been documented among Chlamydia.

Due to similarity of their clinical presentation, it is always advised that whenever a clinician chooses to treat for Gonorrhoea, they should always treat for Chlamydia as well, and vice and versa.

Treatment of Chlamydia

Uncomplicated Anal/ Genital Infection

Doxycycline 100 mg orally twice daily for 7 days

(Not to be used for pregnant women, children or adolescents)

OR

Azithromycin 1 gm orally once only

Alternative Regimens

Amoxycillin 500 mg orally 3 times a day for 7 days

OR

Erythromycin 500 mg 4 times a day for 7 days

OR

Ofloxacin 400 mg orally twice a day for 7 days

OR

Tetracycline 500 mg orally 4 times a day for 7 days

Syphilis

Syphilis is one of the oldest diseases known to mankind. It is caused by *Treponema pallidum* and has such diverse manifestations that about a hundred years ago almost all clinical signs in patients presenting for care were attributed to syphilis (much as they are for tuberculosis today).

Basically the presentation of syphilis can be divided into incubation period (about 21 days), primary, secondary and tertiary stages. An intervening stage called late latent syphilis is also recognized as the period after the manifestations of secondary syphilis resolve and those of tertiary syphilis have yet to start.

Primary syphilis is the early stage when the infection is establishing and presents with an ulcer called *chancre* at the site of inoculation of infection. Usually this is in the genitalia but has been documented on fingers, lips etc as well. Multiple chancres can occur as well. Clinically it is impossible to distinguish chancres from HSV-2 lesions or chancroid (uncommon in Pakistan) with certainty.

Secondary syphilis represents the stage when the infection is multiplying and disseminating. It happens about 2-8 weeks after the chancre. The possible manifestations are many althought the most common presentations are on the skin and include macular, maculopapular, papular or pustular leasions. Any body surface may be involved but palms of the hands and soles of feet are the commonest. Sometimes papules may enlarge, coalesce and erode to a painless, broad, moist, gray white to erythematous highly infectious plaques called *condyloma lata*. Besides skin inflammation of blood vessels can lead to arteritis.

Late latent stage is that phase when a person harbors the infection as shown by tests by no clinical symptoms are present. About 10-25% of these individuals will go on to develop tertiary syphilis.

Tertiary syphilis is late syphilis. Its manifestations include neurologic involvement, ocular involvement, Cardiovascular Syphilis and Late Benign Syphilis (Gumma). These are listed in the table. In the modern era of antibiotics, most of these are not seen although some clinicians feel that in a minority of patients, syphilis may contribute to dementia.

A dreaded manifestation of syphilis is ***congenital syphilis***, which is acquired by the baby in utero. It



Primary Syphilis



Primary syphilis on finger



Secondary syphilis: Plaques of Condyloma lata



Secondary syphilis: Plaques of Condyloma lata

has many complications that are listed in the table. We recommend that treatment of congenital syphilis be referred to specialists.

All patients being considered for STI treatment must also be considered for TESTING for Syphilis ...

Testing for syphilis is critical in detection and treatment of cases. Syphilis is unique in all diseases presented in this manual in that it's the only disease for which testing is advocated. Without testing it is difficult to advise treatment. The tests for syphilis are of 2 kinds: ***Treponemal*** tests and ***non-treponemal*** tests. Treponemal tests include the TPHA and the FTA-ABS. both are available in Pakistan. Non-treaponemal tests are VDRL and RPR. These tests become positive earlier and stay positive during the primary and secondary stages. They usually become negative even in untreated patients about 2-3 years into the infection. The treponemal tests become positive a few weeks after the non-treponemal tests but usually stay positive as long as the patient has the infection. In patients who have been successfully treated, it takes about 1-2 years for these tests to turn negative. In these individuals the titer of the VDRL (or PRP) should be followed. A falling titer is satisfactory. If it does not fall or rises at 3 monthly re-checks, the treatment must be repeated. Treatment of choice for re-treatment is the same: Penicillin. Clinically no resistance has been documented against Penicillins in syphilis.

Clinical Manifestations of Secondary Syphilis

Skin
- Rash
  - Macular
  - Maculopapular
  - Papular
  - Pustular
- Condyloma latum
- Generalized lymphadenopathy
- Pruritus

Mouth and throat
- Mucous patches
- Erosions
- Ulcer (aphthous)

Genital lesions
- Chancre
- Chondyloma latum
- Mucous patch

Constitutional symptoms
- Fever of unknown origin
- Malaise
- Pharyngitis, laryngitis
- Anorexia, weight loss, Arthralgias

Central nervous system
- Asymptomatic
- Symptomatic
  - Headache
  - Meningismus
  - Meningitis
  - Ocular
    - Diplopia
    - Decreased vision
- Otitic
    - Tinnitus
    - Vertigo
- Cranial nerve involvement (II–VIII)

Renal
- Glomerulonephritis
- Nephrotic syndrome

Gastrointestinal
- Hepatitis
- Intestinal wall invasion

Clinical Manifestations of Neurosyphilis

Meningovascular
- Hemiplegia or hemiparesis
- Seizures
- Generalized
- Focal
- Aphasia

Parenchymatous
- General paresis
- Changes in personality, affect, sensorium, intellect, insight & judgment
- Hyperactive reflexes
- Speech disturbances (slurring)
- Pupillary disturbances (Argyll Robertson pupils)
- Optic atrophy tremors (face, tongue, hands, legs)

Tabes dorsalis
- Shooting or lightning pains
- Ataxia
- Pupillary disturbances (Argyll Robertson pupils)
- Impotence
- Bladder disturbances
- Fecal incontinence
- Peripheral neuropathy
- Romberg sign
- Cranial nerve involvement (II–VII)

Arthritis, osteitis, and periostitis

Clinical Signs of Congenital Syphilis	
Early	**Late**
• Osteochondritis • Snuffles • Rash • Anemia • Hepatosplenomegaly • Jaundice • Neurologic signs • Lymphadenopathy • Mucous patches •	• Frontal bosses • Short maxillae • Saddle nose • Protruding mandible • Interstitial keratitis • Eighth-nerve deafness • High palatal arch • Hutchinson's incisors • Mulberry molars • Sternoclavicular thickening (Higouménaki's sign) • Clutton's joints (bilateral painless swelling of knees) • Saber shins • Flaring scapulas

Treatment of Syphilis

Early Syphilis (Primary, Secondary or Latent of less than 2 years duration)

Benzathine Penicillin 2.4 million IU intramuscularly once
(Due to large volume it is recommended that this dose be divided and given as 2 injections sites)

Alternative Regimen

Procaine Benzyl Penicillin 1.2 million IU intramuscularly once daily for 10 days

Alternative Regimen (for Penicillin allergic patients and non-pregnant patients)

Doxycycline 100 mg orally twice a day for 14 days

OR

Tetracycline 500 mg orally twice a day for 14 days

Alternative Regimen (for Penicillin allergic patients and pregnant patients)

Erythromycin 500 mg orally 4 times a day for 14 days

Late Latent Syphilis (Infection of more than 2 years duration)

Benzathine Penicillin 2.4 million IU intramuscularly once a week for 2 consecutive weeks
(Due to large volume it is recommended that this dose be divided and given as 2 injections sites)

Alternative Regimen

Procaine Benzyl Penicillin 1.2 million IU intramuscularly once daily for 20 days

Alternative Regimen (for Penicillin allergic patients and non-pregnant patients)

Doxycycline 100 mg orally twice a day for 30 days

OR

Tetracycline 500 mg orally 4 times a day for 30 days

Alternative Regimen (for Penicillin allergic patients and pregnant patients)

Erythromycin 500 mg orally 4 times a day for 30 days

Neurosyphilis

Aqueous Benzyl Penicillin 2-4 million IU by intravenous injection every 4 hours for 14 days (12-24 millions units a day for 14 days)
(Ideally it should be referred for admission)

OR

Procaine Benzyl Penicillin 1.2 million IU intramuscularly once daily plus Probenecid 500 mg orally 4 times a day, both given for 10-14 days
(Although this regimen is meant for outpatient therapy, please ensure that the patient will remain compliant with FULL treatment)

Herpes Simplex type-2 (HSV-2)

Genital infection with HSV-2 is common. Although no figures are available for Pakistan, in the neighboring India, as many as 15% in the general population seem to be infected. For the majority this infection is asymptomatic. Most clinical manifestations happen within the first year of infection; thereafter the infection becomes latent and unless the patient develops immune compromise, seldom causes problems. It does manifest as painful ulcers or vesicles (blisters). Usually the first episode is the most troublesome and for most, there are no recurrences of clinical diseases. In some there are repeated episodes (***Recurrent Episodes***). Some individuals in whom recurrent episodes are particularly troublesome, suppressive therapy is warranted. It should be noted that treatment of HSV-2 merely suppresses the virus without getting rid of it.

A woman is most likely to infect her newborn child when she acquires HSV-2 during pregnancy. Women with HSV-2 from before they became pregnant seldom transmit HSV-2 to their babies.

Treatment of Herpes Simplex type 2 (HSV-2)

Treatment of Herpes is divided into that of First episode or Recurrent infection. Treatment of recurrent infection shortens the symptomatic period but does not usually clear the infection. In some cases (those with frequent recurrences) suppressive therapy (low dose continuous therapy) may be required.

Treatment of First Episode:

Acyclovir 400 mg 3 times a day for 7 days

Treatment of Recurrent Episodes:

Acyclovir 400 mg 3 times a day for 5 days

Suppressive therapy

Trichomonas Vaginalis

The commonest presentation of Trichomonas infection is a vaginal discharge and vulvovaginal soreness or irritation. Other symptoms are Dysuria or dyspareunia (usually severe) and lower abdominal discomfort; about a tenth of women are asymptomatic with this infection.

Diagnosis is made clinically. Usually no laboratory tests are needed. Details of how to arrive at the diagnosis are listed in the algorithm for vaginal discharge.

Treatment of Trichomonas Vaginalis

Metronidazole 2 gm orally once

OR

Tinidazole 2 gm orally once

Alternative regimen (also used for urethral infections)

Metronidazole 400 or 500 mg orally twice daily for 7 days

OR

Tinidazole 500 mg orally twice daily for 7 days

Bacterial Vaginosis

Bacterial Vaginosis is a common, condition that leads to abnormal vaginal discharge and other symptoms. It is due to replacement of the normal flora of the vagina (predominantly the Lactobacillus spp) by other (predominantly *Gardnerella vaginalis*) organisms. This is the commonest cause of vaginal discharge worldwide. Since there is no male equivalent of BV, it is not considered a sexually transmitted infection, although it is generally considered in these guidelines since the main focus of these guidelines is to address genital symptoms.

The main clinical manifestation of this condition is a foul smelling discharge visible in the lower vault of the vagina and the labia minora. The discharge is usually grayish, thin, homogenous and contains small bubbles. The main finding is a distinct pungent odor noticed by the examiner. If vaginal walls are inspected (with a speculum) they are usually uninflammed. The endocervix is usually uninvolved. The clinical diagnosis may be confirmed with laboratory support. The main finding is special cells on saline wet mount called "clue" cells. In addition these women will have a vaginal pH of >4.5. Together the finding of a homogenous, white, adherent vaginal discharge; a positive whiff test (adding 10% Potassium Hydroxide to the discharge on a slide or speculum leads to a fishy odor); and clue cells, with a relatively alkaline pH and clue cells are the 4 components of the "Amsel" criteria for Bacterial Vaginosis[38]. Clinicians look for 3 out of 4 findings to diagnose BV although evidence suggests that this is not very accurate.

For clinical management of BV we are recommending that clinicians use the algorithm for vaginal discharge.

Treatment of Bacterial Vaginosis

Metronidazole 2 gm orally once

OR

Clindamycin 2% vaginal cream, 5 gm intravaginally at bedtime for 7 days

OR

Metronidazole 0.75% gel, 5 gm intravaginally twice daily for 7 days

OR

Clindamycin 300 mg orally twice daily for 7 days

Treatment during Pregnancy

First Trimester (only if treatment is absolutely necessary): **Metronidazole** 2 gm orally once

2nd or 3rd trimesters: **Metronidazole** 200-250 mg 3 times a day for 7 days

Alternative regimen

Metronidazole 2 gm orally once

OR

Clindamycin 300 mg orally twice daily for 7 days

OR

Metronidazole 0.75% gel, 5 gm intravaginally twice daily for 7 days

Candida

Candida is a yeast or a fungus. Candidiasis means an overgrowth of candida in and around the vagina. The main complaint of women with candidiasis is perivaginal pruritus, often with little or no discharge. Dysuria and excoriations (redness with peeling of skin) in the perivaginal area are usually present. Shallow, radial, linear ulcerations, especially on the posterior portion of the introitus, are common. Tiny papules or papulopustules, called *satellite lesions*, just beyond the main area of erythema are helpful diagnostically. The vaginal walls may be erythematous. Candidal discharge is classically thick and adherent and contains curds. It may, however, be thin and loose and thus resemble the discharge of other vaginitides.
Diagnosis is made clinically. When available demonstrating a normal (<4.5) pH or a negative whiff test (no fishy odor when you add 10% Potassuim Hydroxide to the vaginal discharge) help distinguish candidiasis from Bacterial Vaginosis or Trichomoniasis. Other diagnostic modalities that may help when available are trying to look at the organism on a wet mount under a microscope.

The above description of tests is included for information only. Routine use of these laboratory modalities is not recommended in our guidelines.

Venereal Warts

Vaginal warts are caused by viruses called the Human Papilloma Virus or HPV. They appear as skin tags. They may affect men or women and vary from very small (barely visible) to several centimeters in size. For most patients they represent more of a nuisance or cosmetic blemish than any serious consideration.

Form men they are mostly present on the shaft of the penis, and for women most lesions occur over the posterior introitus, labia mojora and minora and the clitoris, although they may present anywhere in the genital regions including the distal urethra. Perianal warts are common among those who participate in receptive anal sex and among these most lesions may be inside the anal canal.

Although HPV causes warts, cervical cancer and some forms of anal cancer, the exact serotypes that cause each of these conditions are different. However since all are transmitted via sexual contact, we recommend that clinicians refer at least all women presenting with warts for assessment of cervical cancer.

Treatment of Candida

Miconazole or **clotrimazole** 200 mg intarvaginally daily for 3 days

OR

Clotrimazole 500 mg intravaginallly once

OR

Fluconazole 150 mg orally once

Alternate Regimen

Nystatin 100,000 IU intarvaginally daily for 14 days

Treatment for Venereal Warts

Treatment is meant for external genitalia and vaginal. Please refer to gynaecologic specialist for cervical warts

Consider sending patients with warts for gynaecological evaluation since the causative agent of warts (human papilloma virus) increases the risk of cervical cancer

Provider administered: **Podophyllin** 10-25% in compound of tincture or benzoin. Apply carefully avoiding normal tissue. External genital genitalia should be washed thoroughly in 1-4 hours. Allow the applied medicine to dry before removing speculum. Repeat application weekly as needed.

OR

Cryotherapy (when available). Repeat after 1-2 weeks as needed

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Annex 2

COMMON SIDE EFFECTS OF STI MEDICINES

Acyclovir:

Rare side effects in patients treated short-term with acyclovir are nausea, vomiting, and headache. Long-term treatment has the additional potential for rash and diarrhea.

Azithromycin:

Azithromycin is generally well tolerated. The most common side effects are diarrhea or loose stools, nausea, abdominal pain, and vomiting, each of which may occur in fewer than one in twenty persons who receive Azithromycin. Rarer side effects include abnormal liver tests, allergic reactions, and nervousness.

Ciprofloxacin:

The most frequent side effects include nausea, vomiting, diarrhea, abdominal pain, rash, headache, and restlessness. Rare allergic reactions have been described, such as hives and anaphylaxis (shock).

Levofloxacin:

The most frequently reported side events are nausea or vomiting, diarrhea, headache, and constipation. Less common side effects include difficulty sleeping, dizziness, abdominal pain, rash, abdominal gas, and itching.

Ofloxacin:

The most frequent side effects include nausea, vomiting, diarrhea, insomnia, headache, dizziness, itching, and vaginitis in women. Rare allergic reactions have been described, such as hives and anaphylaxis (shock). Symptoms of nervous system stimulation, such as anxiety, euphoria, and hallucinations have rarely been reported.

Ceftriaxone:

If administering Ceftriaxone into a muscle, it may be mixed with Lidocaine (Xylocaine, Lignocaine) to reduce pain at the injection site. Milder symptoms are: Diarrhea, stomach pain, upset stomach, vomiting. More severe symptoms include: unusual bleeding or bruising, difficulty breathing, itching, rash, hives, sore mouth or throat.

Cefixime:

Cefixime is generally well tolerated and side effects are usually transient. Reported side effects include diarrhea, pseudomembranous colitis (can occur even after cefixime is stopped) nausea, abdominal pain, vomiting, skin rash, fever, joint pain and arthritis, abnormal liver tests, vaginitis, itching, headaches, and dizziness.

Clotrimazole:

The most commonly noted side effects associated with clotrimazole are local redness, stinging, blistering, peeling, swelling, itching, hives, or burning at the area of application. All of these are quite unusual, however.

Doxycycline:

Doxycycline is generally well-tolerated. The most common side effects are diarrhea or loose stools, nausea, abdominal pain, and vomiting. Tetracyclines, such as doxycycline, may cause tooth discoloration if used in persons below 8 years of age. Exaggerated sunburn can occur with tetracyclines; therefore, sunlight should be minimized during treatment.

Tetracycline:

Tetracycline is generally well-tolerated. The most common side effects are diarrhea or loose stools, nausea, abdominal pain, and vomiting. Tetracyclines may cause discoloration of teeth if used in patients below 8 years of age. Exaggerated sunburn can occur with tetracyclines; therefore, sunlight should be minimized during treatment

Fluconazole:

Up to 25% develop side effects from this medication. Headaches, nausea, abdominal pain, diarrhea or dizziness are common. Severe skin rash may occur but is uncommon.

Miconazole:

Irritation and burning have been reported by patients using topical or vaginal miconazole

Tinidazole:

Tinidazole may cause side effects. Consider stopping it if any of these symptoms are severe or do not go away: sharp, unpleasant metallic taste, upset stomach, vomiting, loss of appetite, constipation, stomach pain or cramps, headache, tiredness or weakness, dizziness. Some side effects can be serious. The following symptoms are uncommon, but require that the medicine must be stopped immediately: seizures, numbness or tingling of hands or feet, rash, hives, swelling of the face, throat, tongue, lips, eyes, hands, feet, ankles, or lower legs, hoarseness, difficulty swallowing or breathing.

Nystatin:

Diarrhea, nausea, gas, or vomiting as until the body adjusts to the medication. If these symptoms persist or get worse consider stopping the medicine.

Clindamycin:

Mild diarrhea or stomach upset may occur. If any of these effects persist or worsen, they should be observed carefully. Although unlikely, vaginal pain/itching/discharge may occur or worsen. These symptoms may be due to a new vaginal infection (e.g., yeast/fungal infection, trichomonas infection). This medication may infrequently cause a fungal infection in another part of the body (e.g., oral thrush). This may manifest as a change in vaginal discharge, white patches in your mouth,

or other new symptoms. Many people using this medication do not have serious side effects. Serious side effects include: pain on urination, lower back pain, menstrual problems, abnormal vaginal bleeding. A very small amount of this medication may be absorbed into bloodstream and may rarely cause a severe intestinal condition (*pseudomembranous colitis*) due to a resistant bacterium. This condition may occur while receiving therapy or even weeks after treatment has stopped. Do not use anti-diarrhea products or narcotic pain medications if you suspect that the patient has this condition because these products may make them worse. Major signs of *pseudomembranous colitis* are persistent diarrhea, abdominal or stomach pain/cramping, or blood/mucus in stool. A very serious allergic reaction to this drug is unlikely, but requires immediate medical attention if it occurs. Symptoms of a serious allergic reaction may include: rash, itching, swelling, severe dizziness, trouble breathing.

Metronidazole:

Metronidazole is generally well tolerated with appropriate use. Serious side effects of metronidazole are rare; and include seizures and damage of nerves resulting in numbness and tingling of extremities (peripheral neuropathy). Metronidazole should be stopped if these symptoms appear. Minor side effects include nausea, headaches, loss of appetite, a metallic taste, and rarely a rash.

Penicillin:

This medication may cause mild diarrhea, stomach upset, nausea, vomiting or irritation at injection site during the first few days. If this irritation worsens or persist for more than a few days, stop the medicine. Medicine should be stopped if patient develops: watery diarrhea, stomach cramps, fever, unusual bleeding or bruising, yellowing of the eyes or skin, unusual tiredness or weakness. In the unlikely event of an allergic reaction to this drug, appropriate care for anaphylaxis should be provided. Symptoms of an allergic reaction include: wheezing, difficulty breathing, skin rash, hives, itching.

Podophyllin

Swelling, pain, burning, itching, peeling skin, small sores, or headache may occur. Most serious side effect is bleeding.

Spectinomycin:

Nausea, rash, headache, itching, or pain/redness at the injection site may occur. If any of these effects persist or worsen, consider stopping the medicine. More serious side effects are: fever, chills, trouble sleeping, vomiting, dizziness. An allergic reaction to this medication is unlikely, but requires immediate medical attention if it occurs. Symptoms of an allergic reaction include: rash, itching, swelling, trouble breathing.

STI DRUGS: BRANDS AVAILABLE FOR DRUGS MENTIONED IN THE GUIDELINES

Acyclovir

Zovirax	Elovir	Santovir	Virustal	Zaclovir
Aclova	Herpesin	Supraviran	Virutal	Zaglovir
Acylex	Lovir	Verox	Virux	Zoraxin
Cycloz		Virucid		

Azithromycin

Azomax	Azicin	Azoxin	Macrobac	Romycin
Zithromax	Azirol	Azpar	Macromax	Rothin
Zithromed	Azit	Azrocin	Megatab	Spell-250
Azimycin	Azithrocin	Bactizith	Od-3	Z-mac
Azelide	Azo	Biozit	Plazo	Zatrox
Athofix	Azoheim	Ezill	Rasthro	Zezot
Azibect	Azores	Geozit	Resgiue	Zimax
Azot	Macro-Z	Rezoxin	Zithrosan	

Ceftriaxone

Rocephin	Ceftridex	Hizone	Prezone	Titan
Acme	Ceftron	Inocef	Ptrox	Topcef
Labsx	Cefxone	Kefcef	Pulcef	Travilan
Aczon	Cepox	Lendacin	Qzon	Traxon
Axon	Cerixon	Lozon	Rocimed	Triax
Bestrix	Chef	Macxone	Ryxon	Tricef
Broadced	Chroncef	Maxef	Salxone	Tricefin
C-trox	Dayzone	Mecrobin	Sergifex	Trizon
Cef-3	Eftriax	Mercefex	Sky-zone	Trophin
Cefcin	Elxone	Neogene	Socephin	Ty-oxone
Cefin	Fordeme	Norbac	Socin	Ventraxin
Cefotrim	Fotamin	Novosef	Sodocef	Vetrox
Ceftison	Geo	Ortazon	Sonnet	Vexa
Ceftrex	Gigantic	Oxidil	Spor-3	Vitrox
Tecifin	Zftrox			

Cefixime

Supracef	Cefim	Duet	Maxpan	Snapcef
Ceflorex	Cefiscot	Evofix	Medispan	Spril
Cefacef	Cefitol	Fixime	Mefixim	Suprin
Cefix	Cefkan	Fixitil	Megaxim	Tinocef
Amber	Ceforal-3	Fixomycin	Megazime	Tycef
Bactirid	Cefspan	Flixitil	Nenxime	Vencef
Benifix	Ceftas	Flozid	Ortazim	Vg-span

Bestar	Cefto	Glixim	Prixime	Vimacef
Caricef	Cewel	Kayfix	Refspan	Vixime
Cebosh	Cexime	Linzim	Reyan	Xim
Cefamax	Cili-cef	Magnett	Secure	Ximyan
Cefazon	Delsixime	Maxophine	Septipan	Xival
Cefexol	Dispel		Sivarol	

Erythromycin

Erymox	Acumen	Erupein	Erywil	Throcin
Emycin	Deltacin	Erybron	Infectocin	Trocin
Erythrocin	Ecin	Erycina	Muconil	Trycin
Erythromycin	Epthrocin	Eryderm	Pediazole	Wilmycin
Erythrotabs	Erithrin	Erymin	Stiemycin	Xexab

Ciprofloxacin

Ciprocin	Cipex	Cithrox	Kuinopt	Proflox
Ciprox	Ciplox	Cithrox	Labentrol	Quell
Ciproxin	Cipocaine	Cipzaf	Lucid	Quic
Quinoflox	Ciport	Cycin	M Cip	Quidex-ciflox
Ciprocide	Cipotic	Cyflox	Medicip	Quinocin
Adacip	Ciprocure	Cyprex	Megaflox	Racip
Adiflox	Ciproday	Cyrocin	Mercip	Rekociprin
Algocin	Ciprofaz	Diloxin	Mercip	Riget
Anacin	Ciprofena	Ethiflox	Mytil	Riteflox
Anacin	Ciprofine	Euro Tabs	Nafacin	Rocip
Aristin-c	Ciprofine	Excipro	Neofloxin	Roflox
Avocin	Ciproheim	Flinox	Nexter	Roxin
Bacteronil	Ciprok	Florocin	Noacip	Rozid
Bacteronil	Ciprol	Floxacin	Novidat	Siprof Supreme
Blossom	Ciprolon	Floxcip	Ocuciprox	Suprox
Cepci	Cipromed	Gavel	Ophth-cil	Veprox
Cikin	Cipronag	Glirox	Ophth-cipro	Viloc
Ciloxan	Ciproquine	Hiflox	Ophth-flox	Xeoxcin
Cinoflox	Ciproscot	Hipro	Orcid	Zacin
Ciof	Ciproyan	Inoquin	Oxirase	Zindolin
Cip-250	Cipsa	Invoflox	Paraflox	Zoloxin
Cipacin	Cipsa	Invoflox	Procam	
	Cipzor	Kuin	Profacs	

Doxycycline

Doxylide	Capsidon	Doxygen	Libracin	Parkedox
Doxycycline	Cedox	Doxyheim	Maxibiotic	Rapidox
Doxylin	Contimycin	Doxyn	MB-Dox	Remycin
Doxymed	Dc 100	Epidox	Megacin	Saydox
Vibramycin	Dekomycin	Ethidox	Megadox	Sizadox
Vibratab	Dolcycline	Etidoxine	Monodox	Slocycline
Doxymycin	Doxcid	Exmycin	Neutrocyn	Supramycin-100
Acnedox	Doxcil	Fenseptyl	Nordox	Vibradoxin

Adoxa	Doxikay	Infadox	Novodox	Vibrodoxin
Apdoxy	Doxy-A	Jawamycin	Ocecycline	Voxin
Ardox	Doxyclate	Kodex	Orocycline	Wellcodox
Bsadox	Doxydos	Korcin	Pandox	

Levofloxacin

Levaquin	Kavoflox	Levocure	Levoxor	Savelox
Levofloxa	Kevox	Levoday	Levyan	Spectrix
Aksolox	Kobexin	Levofaz	Lezov	Tavanic
Bexus	Lecin	Levofin	Linatic	Tevoflox
Brodin	Leflocin	Levoheim	Lurk	Turbonic
Cravit	Leflox	Levomed	Neumo	Vizor
Dynaquin	Leocin	Levonic	Oliza	Votec
Effiflox	Levlong	Levort	Protektin	Warior
Everbact	Levo	Levoscot	Quest	Xalvo
Exmic	Levocil	Levoxacin	Qumic	Xelof
Glit		Levoxin	Revocin	Zevo

Ofloxacin

Ofloquin	Bacus	Floxy	Oflexer	Otacin
Re-ved	Capflo	Floxyan	Oflobiotic	Q-span
T-vid	Cinvolox	Fugacin	Ofloheim	Quinox
Tarivid	Delvid	G-vid	Oflomed	Rakavid
Zoflox	Dintoflox	Geoflox	Ofloscot	Rewell
E-flox	Divirat	Getiflox	Oflox Ofly-V	Rutix
Oflobid	Dyramid	Gyrex	Oftag	Tabroxacin
Adios	Eracin	Korvid	Ofus	Tariflox
Arvid	Exact	Mediox	Optiquin	Tasoflox
Bactacin	Exocin	Megavid	Optoflox	Teknoflox
Bacteflox	Florax	Ofaxin	Oracin	Tissot
Bactivid	Floxol	Ofcil	Orvacin	Utixan

Benzathine Penicillin

Benzibiotic
LP Pen
Penidure La

Benzyl Penicillin

Benzyl Pencillin
Polybiotic

Tetracycline

Achromycin	Chemicycline	Furosal	Pexocycline	Tetrawil
Anglolycline	Dosamycin	Ophth-tetracil	Rekomycin	Vagmycin

Annex 4

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A SYSTEM OF IDENTIFICATION OF PROVIDERS FOR TRAINING ON STI MANAGEMENT

Healthcare delivery in Pakistan in mostly via the private sector and STI care delivery follows the same pattern. Mostly, general practitioners see the bulk of STIs. Since STIs are mainly prevalent among high risk groups and national surveillance (HASP) shows that these groups are located in semi-discrete locations in cities, it is reasonable to target those general practitioners (GPs)[‡‡] working in these locations for training on STI management using directed provider finding using local NGOs[§§].

An additional group that should be targeted for training are those providers that provide STI care in public facilities. While they see fewer overall STI cases than GPs, they see perhaps more complicated ones. This is certainly true for Urologists.

The role of gynecologists is more complex. While they don't see many STIs, they do see many STI symptoms. It is important that they realize what they are seeing and what are appropriate and inappropriate clinical actions to carry out with their patients. They also have facilities and training to act as trainers and referred-to-specialists. Finally due to natural synergies in terms of prevention, gynecologic visits serve as venues for providing messages including promotion of condom use and other prevention advice.

It is therefore proposed that the following order be employed in identifying training recipients.

1. GPs practicing in high risk areas
2. Public sector providers in those cities that have high number of high risk groups
3. Gynecologists, STI providers (skin specialists or other STI specialists) and Urologists in public facilities
4. Public sector providers and GPs in non-high risk areas
5. Other providers[3]

Certain national organizations can play a key role. The Pakistan Medical Association, the Association of General Practitioners and the Family Planning Association of Pakistan all have wide membership. These and other professional organizations usually arrange training and other educational activities for their members. They can be involved in the STI training process and may participate by either holding periodic trainings for their members or by encouraging their members to avail ongoing trainings. However in order for these organizations to participate, they must be approached and engaged with by the Provincial AIDS Programs.

[‡‡] It is noted that while GPs are mentioned, the intention is that all providers that provide STI services (including non-traditional healers) will be included in the training regimen. The purpose of this recommendation is that since these providers are already seeing patients with STI symptoms and possibly mismanaging them, appropriate training may lead them to treat patients more appropriately.

[§§] The national HIV/AIDS Surveillance Project (HASP) periodically maps members of high risk groups. In many such locations the Enhanced AIDS Control Program is in operation. The SDPs that implement the program are very aware of the local dynamics of these locations. They maintain close liaison with local doctors as well. This approach was instrumental in gaining access to these GPs by the consultant. These SDPs will be asked to identify those GPs that are visited by their clients. With time the process can be expanded to included the less frequently accessed GPs and other outlets in the area.

Identification of Master Trainers:

Master Training can be of 2 models: 1) Identification of a set of Master Trainers that are utilized again and again to train each batch of trainees; or 2) Initially training a group of trainers that train the next batch of trainees who then train yet another batch of trainees and so on. Each system has its benefits and disadvantages.

In the first model, the major advantage is that the quality of trainings is more strictly controlled. On the other hand it leads to a limited number of trainers and if the training program becomes large, will strain time and availability of these individuals.

In the second model the advantage is that the number of trainers can be scaled up quickly. On the other hand, there is a real danger of declining quality with each subsequent cycle of trainees unless the initial quality standards are maintained. t has been the experience in Pakistan that this model does not work due to quality attrition.

We propose that the Provincial AIDS programs identify a group of individuals who will trained as master trainers[***]. These individuals will train perhaps one more generation of trainers. In the beginning it is envisaged that each province will develop a core of about 20 trainers who can provide periodic trainings to providers at approximately 3 monthly intervals. It is essential to have a large number of trainers to accommodate for individual availability and to keep a regular cycle of trainings going. It is also strongly recommended that these trainers be compensated for the time they commit to the training process. This has been lacking from previous training efforts and is felt to be an impediment to subsequent work with trainers.

The initial group of trainers will likely come from educational institutes. Departments of gynecology and dermatology that were visited by the consultant all unanimously agreed to provide this service but many would like to be compensated[†††] for their time.

In summary the following is proposed:

1. Identify master trainers from academia (public sector departments of Gynecology and Dermatology). A total of approximately 20 are needed to initiate the process in each province.
2. Facilitate trainings logistics (by PACPs)
3. Identify first wave of target trainees. These will include those private sector GPs and some selected public sector providers that are providing STI services
4. The second wave of trainees will come from other outlets that provide general services (including STIs) in these same locations.
5. The next wave will constitute family practice/ reproductive health outlets that may be identified by the provincial AIDS control programs.
6. Further training can be expanded to include other providers including those at RHCs and BHUs and other public or private facilities (including small hospitals or nursing homes).

[***] Contrary to the current practice of using current PACP and NACP officers as trainers, we are proposing that this service be out sourced to local specialists. This has 2 advantages. One it frees up the AIDS program officers to engage in other activities. Secondly it creates a larger pool of trainers and therefore allows more flexibility with training schedules. Thirdly, it involves the local specialists in STI management and therefore creates a pool of specialists to refer to and perhaps may even lead to their involvement in STI care operations research.

[†††] The term *compensated* is used rather than *remunerated*. Many of the departments felt that they should be compensated "in kind" with educational supplies, computers etc.

Referral system:

A referral system was identified as a major gap by nearly all our informants. A system is needed to safely and efficiently refer difficult STI patients, those not responding to treatment and some of the surgical or gynecological emergencies that are identified by the providers when administering the algorithms.

A working referral system requires several elements. Foremost it requires the trust of the referring provider and the client. In order to generate this trust the patient must be seen efficiently, with respect by the consultant and be then sent back after completion of the special treatment. The specialist must be available when needed and to some extent their services must be affordable.

In principal all specialist we talked with agreed to provide the referral service. In practice however many patients referred to these specialist find that they have to wait for long periods of time and when they do get seen, their encounters are brief and often unsatisfying.

The Provincial AIDS programs can play a role. Foremost they can maintain a list of those specialists that will receive referred patients. These can be specialists in a teaching hospital or be specialists in the community with particular expertise. An example of the later could be surgeons or urologists in private practice. The other role that PACPs can play is to facilitate these referrals. One thing to do will be to ensure that the referred patients get sufficient time and attention with the specialist. The exact mechanism for this will have to be worked out but some form of sequestered time is an option.